PTC. 271 (N)
600

GOVERNMENT OF INDIA

TARIFF COMMISSION

सत्यमेव जयते

REPORT

ON THE

DYESTUFF INDUSTRY

सत्यमेव जयते

BOMBAY,
1955

DIA BY THE MANAGER, GOVT. OF INDIA PRESS, NEW DELHI
D BY THE MANAGER OF PUBLICATIONS, DELHI, 1955
Price Rs. 1 annas 12 or 2sh 6d.

PERSONNEL OF THE COMMISSION

SHRI M. D. BHAT	*Chairman*
SHRI B. N. ADARKAR, M.A.(CANTAB)	*Member*
SHRI B. N. DAS GUPTA, B.A., A. S. A. A.(LONDON), F. C. A.	*Member*
SHRI C. RAMASUBBAN	*Member*
DR. D. K. MALHOTRA	*Secretary*

PERSONNEL OF THE PANEL WHICH HEARD THE CASE

SHRI M. D. BHAT	*Chairman*
SHRI B. N. ADARKAR	*Member*
SHRI B. N. DAS GUPTA	*Member*

सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY

RESOLUTION

TARIFFS

New Delhi, the 2nd February, 1955

No. 78(1)TB/54.—The Tariff Commission have submitted their report on the first part of their enquiry relating to the Dyestuff Industry after an enquiry undertaken under Section 11 of the Tariff Commission Act, 1951. The scope of the present enquiry is confined to the following manufactures of dyes:

(A) (i) Acid Azo Dyes. (ii) Direct Azo Dyes. (iii) Sulphur Black.	Classifiable under Tariff Item 30(13).
(B) (i) Azoic Dyes, the following, namely— Fast Colour Salts, Rapid Fast Dyes and Rapidogen Dyes: and (ii) Solubilised Vat Dyes.	Classifiable under Tariff Item 30(1).

2. The Commission have observed that the existing Import Trade Control has been of value to this industry and have urged that so long as such control has to be maintained on balance of payments consideration, the import of dyes should continue to be regulated and that the demands of only such dyes as cannot be met by indigenous production should be allowed to be imported. In addition, they have made the following recommendations:—

(1) Protection to the dyestuff industry should be granted for a period of ten years, *i.e.*, up to the 31st December, 1964, subject to periodical reviews by the Tariff Commission of the working of protection and the quantum of protection.

(2) The duty on acid azo dyes, direct azo dyes and sulphur black, which are included in the Indian Customs Tariff Item No. 30(13) should be increased to the maximum rate, *viz.*, 20 per cent. *ad valorem*, permissible under the provisions of the General Agreement on Tariffs and Trade, and converted into a protective duty. Since dyes constitute an essential material for important industries like the textile and paper industries and it is not desirable that the burden on these industries should be increased more than what is necessary to afford protection to the indigenous dyestuff industry, the higher rate of duty recommended above should apply only to dyes mentioned above and not to all dyes at present assessed under item 30(13).

A new item should, therefore, be introduced in the Indian Customs Tariff Schedule for acid azo dyes, direct azo dyes and sulphur black with a protective duty of 20 per cent. *ad valorem.*

(3) The duty on Congo red, fast colour salts, rapid fast dyes, rapidogen dyes and solubilised vat dyes, included in Indian Customs Tariff Item No. 30(1), which is at present 12 per cent *ad valorem,* should be converted into a protective duty and a separate I.C.T. item should be introduced for these dyes.

(4) Government should take steps to ensure that the tariff values for imported dyes are fixed on the basis of the highest strengths in which the dyes are imported. They should also arrange to record the strengths adopted for the purpose of fixing the tariff values and to study how far the tariff values approximate to the average c.i.f. prices for such strengths over a period. Pending this arrangement, the existing method of determining tariff values of dyes should continue.

(5) The standard rate of duty on the following specific intermediates should be reduced to 10 per cent. *ad valorem*:

(a) Para Nitraniline.
(b) Amino Azo Benzene Hydrochloride.
(c) Sulphanilic Acid.
(d) Benzidine Di-hydrochloride.
(e) Sodium Naphthionate and Naphthionic Acid.
(f) Neville and Winther's Acid.
(g) Rhoduline Acid.
(h) J Acid Urea.
(i) Para Amino Acetanilide.
(j) Dinitro Chlorobenzene.
(k) Meta Phenylene Diamine.
(l) Gamma Acid.
(m) Meta Toluylene Diamine.
(n) Chicago Acid.
(o) H. Acid.
(p) G. Salt.
(q) Laurent's Acid.

सत्यमेव जयते

This concession should remain in force until 31st December, 1955, when the position should be reviewed.

(6) Government should take the necessary steps to secure complete freedom of action to impose customs duties which may be found necessary on dyes, intermediates and other articles, included in Indian Customs Tariff Item Nos. 30(1) and 30(13) when any new agreements are entered into with foreign countries on the expiry of the present General Agreement on Tariffs and Trade.

(7) A fresh inquiry into the industry should be held by the Commission towards the end of 1955 and in the meanwhile the scheme of protection covered by recommendations (1) to (4) above should be put into force in addition to maintaining the existing restrictions on imports of dyes.

3. As regards recommendations (2) and (3) above, it is pointed out that Congo red falls to the category of direct azo dyes and consequently, recommendation (2) in regard to the levy of a protective duty of 20 per cent. *ad valorem* should apply to it—and not recommendation (3) relating to the levy of a protective duty of 12 per cent. *ad valorem.* Subject to this amendment, which has been concurred in by the Tariff Commission, Government accept recommendations (2) and (3) as also recommendations (1) and (5) above and steps will be taken to implement them. Government also accept recommendations (4) and (7) in principle and suitable steps will be taken to implement them as far as possible. As regards recommendation (6), the Commission have themselves recognised that in the interest of domestic industries consuming dyestuffs it is not desirable to raise duties on all dyes covered by I.C.T. No. 30(13) to 20 per cent. *ad valorem* though we have freedom to do so and have therefore recommended that the higher duty should be applicable to only such dyes as are being manufactured in the country. So long as we are not utilising the limited freedom which we possess even now, it is not necessary to request the GATT for complete freedom on the lines suggested in this recommendation. The question of seeking release will be considered when the domestic industry has developed to a stage where it will be in a position to meet the bulk of domestic requirements.

4. The Commission have also made the following ancillary recommendations:—

(a) It is essential that the Coal-tar distillation industry should be established in the country so that it will meet fully the requirements of the dyestuff industry. Close coordination between the development of the dyestuff industry and the Coal-tar distillation industry would be necessary and Government should initiate an investigation to determine the lines on which such development should be planned and the measures required to encourage such planned development.

(b) A plan for expanding the production of inorganic heavy chemicals as a necessary complement to a programme of manufacture of intermediates for the dyestuff industry should be formulated so that these chemicals are available to the indigenous dyestuff industry in sufficient quantities and at reasonable prices.

(c) Atul Products Ltd. should draw up a revised programme on a long-term basis for the manufacture of dyes and intermediates on the lines indicated in paragraph 15(d) of the Report (*i.e.* incorporating detaild information on such points as the period required for implementing each phase of the programme, the scale of output, the prices and availability of raw materials, the extent of financial resources and technical assistance available, the probable cost of production of each item in relation to the current import cost, and specific assistance, if any, required from Government). Similar programmes should be drawn up by other units for the manufacture of dyes and intermediates proposed to be manufactured by them. When these detailed programmes are received from the various units they should be referred to a Committee of Government experts for examination in collaboration with the technical experts of the various units. The report of the Committee of experts and Government's decision thereon should be available to the Commission before the position of the dyestuff industry is reviewed towards the end of 1955.

(d) Government should make the necessary arrangements for the selection of samples of indigenous dyes by an independent agency and for the testing of their quality by a well-equipped institution.

(e) The Indian Standards Institution should, in consultation with the producers and importers of dyes, try to evolve standards of strength with reference to which the actual strength of indigenous or imported dyes can be determined.

(f) Arrangements should be made to maintain records of production and imports according to the following classification:—

I. *Azo dyes.*

(a) Acid azo dyes.

(b) Basic azo dyes.

(c) Direct dyes other than Congo red.

(d) Congo red.

II. *Azoic dyes and components.*

(a) Naphthols.
(b) Fast colour bases.
(c) Fast colour salts.
(d) Rapid fast dyes.
(e) Rapidogen dyes.

III. *Vat dyes.*

(a) Indigo.
(b) Other vat dyes.

IV. Solubilised vat dyes.

V. Sulphur Black.

VI. Sulphur dyes other than Sulphur Black.

सत्यमेव जयते

VII. Acid dyes other than acid azo dyes.

VIII. Basic dyes other than basic azo dyes.

IX. Mordant dyes including Alizarine.

X. Chrome dyes.

XI. Acetate Rayon dyes.

XII. Lakes, Pigments, toners and spirit soluble dyes.

XIII. Other dyes not specified above.

(g) The manufacturers of dyes should set aside substantial amounts for research and employ adequate staff of trained research workers.

5. Government accept in principle the recommendations (a), (b), (c), (d), (e) and (f) in the preceding paragraph and suitable steps will be taken to implement them as far as possible.

6. Government invite the attention of the industry to recommendation (c) and wish to emphasise that the detailed programme of production drawn up by the individual units should be forwarded to the Chief Industrial Adviser, Ministry of Commerce and Industry (Development Wing), New Delhi, as early as possible, and in any case, by the 28th February 1955, at the latest. The attention of the industry is also drawn to recommendation (g).

ORDER

Ordered that a copy of this Resolution be communicated to all concerned and that it be published in the Gazette of India.

K. B. LALL, Jt. Secy.

सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF COMMERCE AND INDUSTRY
NOTIFICATION
TARIFFS

New Delhi, the 2nd February, 1955

No. 78(1)-T.B./54.—In exercise of the powers conferred by sub-section (1) of section 3A of the Indian Tariff Act, 1934 (XXXII of 1934), as in force in India and as applied to the state of Pondicherry, the Central Government hereby directs that with immediate effect there shall be levied on the articles specified in column (1) of the Table hereto annexed when imported into India or into the state of Pondicherry the duty of Customs specified in the entry in column (2) thereof.

THE TABLE

Name of articles	Amount of customs duty [inclusive of the duty chargeable under sub-section (1) of section 2 of the Indian Tariff Act, 1934, and any additonal duty leviable under any other law for the time being in force].
(1)	(2)
Dyes derived from Coal Tar, and Coal Tar derivatives used in any dyeing process, the following, namely :—	
Dyes belonging to the class of Rapid Fast Colours, Rapidogens and Rapidazols	12 per cent. *ad valorem.*
Fast Colour Salts	12 per cent. *ad valorem.*
Solubilised Vats	12 per cent. *ad valorem.*
Dyes derived from Coal Tar, the following, namely :—	
Acid Azo Dyes (including Acid Fast Red A)	20 per cent. *ad valorem.*
Direct Azo Dyes (including Congo Red)	20 per cent. *ad valorem.*
Sulphur Black	20 per cent. *ad valorem.*

K. B. LALL, Jt. Secy.

CONTENTS

PARAGRAPH PAGE

1 Origin of the case 1

2 Method of inquiry 1

3 Description and uses 2

4 Scope of the inquiry 4

5 Domestic demand 5

6 Present position of the industry 11

7 Raw materials and intermediates 18

8 Process of manufacture 22

9 Quality of the indigenous dyes 23

10 Import control policy and imports 24

11 Existing rates of import duties 25

12 C.i.f. prices of imported dyes 25

13 Estimates of fair ex-works prices of dyes 29

14 Comparison of c.i.f. prices and landed costs of imported dyes with estimated fair ex-works prices of indigenous dyes 36

15 Measure of protection 41

16 Other matters 50

17 Summary of conclusions and recommendations 51

18 Acknowledgements 53

APPENDICES

I. List of producers, importers, consumers, and others to whom questionnaires were issued and those who submitted replies or sent memoranda 54

II. List of persons who attended the public inquiry on 29th and 30th December, 1953 57

III. List of dyes which are being produced in India at present and of those which are included in the manufacturing programme of the various units 59

IV. (A) Statement showing imports of dyes during the years, 1946-47 to 1952-53 as shown in the Accounts Relating to the Foreign Trade of India 60

(B) Statement showing imports of dyes countrywise during the years 1946-47 to 1952-53 as shown in the Accounts Relating to the Foreign Trade of India 62

V. Details of the Import Control Policy for Dyes for the licensing periods January—June, 1951 to July—December, 1954 . 63

REPORT ON THE DYESTUFF INDUSTRY

Origin of the case

1. On 3rd December, 1950, Atul Products Ltd., addressed a letter to the Ministry of Commerce pointing out the handicaps from which new chemical industries suffered in the absence of proper classification of chemicals for purposes of assessment to import duties and requesting for suitable revision of the existing customs classification and of the rates of duties in respect of raw materials used by new chemical industries. Subsequently, when they started importing intermediates for production of dyes, they again approached the Ministry of Commerce and Industry on 22nd May, 1952 reiterating their request. The application of Atul Products Ltd. for abolition or reduction of import duties on intermediates and raw materials used in the manufacture of certain dyes, drugs and pharmaceuticals was referred to the Tariff Commission for inquiry and report by the Ministry of Commerce and Industry under Section 11 of the Tariff Commission Act, 1951, by their Resolution No. 38-T(1)/51, dated 27th February, 1952. A further representation was made by Atul Products, Ltd. to the Ministry of Commerce and Industry on 2nd September, 1953 in which they pointed out that any relief that might be given to the industry as a result of the Commission's recommendation, in regard to the abolition or reduction of import duties on raw materials and intermediates would not be sufficient to enable them to compete with imported dyes. They, therefore, requested that in addition to relief by abolition or reduction of import duties on raw materials and intermediates, protection should be given to them by all feasible means in respect of the groups of dyes manufactured by them or proposed to be manufactured by them in the immediate future, *viz.*, direct dyes, acid dyes, sulphur black and naphthols. This application was also referred to the Commission for consideration by the Ministry of Commerce and Industry.

Although the Ministry of Commerce and Industry Resolution dated 27th February, 1952, was based on the application of Atul Products Ltd., it was felt by the Commission that the inquiry would have to cover the entire field of dyes, drugs and pharmaceuticals as there were several other manufacturers of dyes, drugs and pharmaceuticals besides Atul Products Ltd., who were also interested in the reduction of duties on raw materials and intermediates used by them. Since, however, the inquiry was expected to involve a detailed and prolonged examination of the problems confronting these industries, it was decided by the Commission to take up the inquiry into the dyestuff indutry first and to undertake the inquiry into the drugs and pharmaceutical industries later.

Method of inquiry

2. (a) On 24th April, 1952, Atul Products, Ltd. were addressed for information in regard to the scope of their manufacturing programme and their estimates of cost of production of dyes and the disadvantages arising out of the existing rates of duty on raw materials, intermediates and finished products. On 22nd July, 1953, the Commission issued a press communique inviting persons, firms and associations interested in the dyestuff industry to obtain copies of the

questionnaires from the Commission's office. Detailed questionnaires were issued on 23rd July, 1953, to all known producers and importers. The questionnaire for consumers was issued only to associations representing the interests of the industries using dyes. A list of firms and associations to whom the questionnaires were issued and from whom replies or memoranda were received is given in Appendix I.

The Industrial Adviser (Chemicals), Ministry of Commerce and Industry (Development Wing), was requested to send a detailed memorandum on the dyestuff industry. The Textile Commissioner, Bombay, was requested to forward a memorandum incorporating information on various aspects of the industry, and giving his views in regard to the quality of the locally manufactured dyes and his estimate of the annual demand for dyes in the country. As the dyestuff industry is largely concentrated in Bombay and Delhi States, the Director of Industries, Bombay, and the Chief Commissioner, Delhi, were requested to furnish memoranda on the industry in their States. The Indian Chemical Manufacturers' Association, Calcutta, the Ahmedabad Textile Industry's Research Association, Ahmedabad, the National Chemical Laboratory, Poona, the Department of Chemical Technology, University of Bombay, Bombay, and the Government Ordnance Factory, Kirkee, were also requested to forward memoranda on the dyestuff industry.

Shri M. D. Bhat, Chairman, Shri B. N. Adarkar, and Shri B. N. Das Gupta, Members and Dr. D. K. Malhotra, Secretary visited the factory of Atul Products Ltd., Parnera, on 17th September, 1953. Shri S. S. Mehta, Technical Director (Chemicals) and Shri S. V. Rajan, Assistant Cost Accounts Officer, visited the factories of Atul Products Ltd. from 17th to 23rd August, 1953, National Chemical Industries, Delhi, from 25th to 29th August, 1953, and Associated Research Laboratories, Bhatgar, on 9th November, 1953 and examined the costs of dyes produced by them.

(c) A public inquiry was held at the Commission's office in Bombay on 29th and 30th December, 1953. Subsequently, the Commission held discussions with the representatives of the producers on the details of cost. A list of persons who attended the public inquiry and were present at the discussions is given in Appendix II.

Description and uses

3. Until about the middle of nineteenth century, most of the dyes in use were of vegetable origin. As chemical research advanced, natural dyes were gradually replaced by synthetic dyes and by the beginning of this century, the synthetic dyestuff industry was established in Germany. Almost all synthetic dyes are made from derivatives of coal-tar and light oil which are obtained in the process of carbonisation of coal. These derivatives or the basic raw materials of the dyestuff industry are benzene, toluene, xylene, naphthalene, carbazole, pyridine, anthracene and cresols. By a series of chemical reactions through complex processes they are converted into a large number of intermediates. Between the basic raw materials and finished dyes, there are several stages of manufacture and depending on their proximity to the former or the latter, the intermediates may be described as primary intermediates and complex intermediates.

The finished dyes are of numerous types and colours but they are usually grouped by trade according to their application. Broadly speaking, all dyes may be said to belong to one or the other of the following groups, though some may belong to two or more groups:—

(1) *Acetate Silk Dyes.*—Acetate silk cannot be dyed either with direct cotton dyes or acid wool dyes and in order to meet the requirements of this fibre, new types of dyes have been developed, the majority of which consist of insoluble azo compounds whereas some of the others are insoluble anthraquinone derivatives.

(2) *Acid Dyes.*—Most of these are sulphonic acid compounds derived from azo derivatives of benzene, toluene and naphthalene. They are applied to silk and wool in neutral or acid bath.

(3) *Azoic Dyes.*—This group consists of components like naphthols, fast colour bases and fast colour salts as well as stabilised azoic dyes like rapid fast dyes and rapidogens. When naphthols are used in combination with fast colour bases, the bases have to be diazotised and coupled with the naphthols. Alternatively, fast colour salts which consist of diazotised bases in a stabilised form can be used directly in combination with naphthols. The rapid fast dyes and rapidogens are mixtures of stabilised diazo compounds and naphthols which can be directly applied to the material and developed within the fibre. Azoic dyes are comparatively high priced dyes which are mainly used for dyeing and printing of cotton goods to obtain brilliant shades which are fast to washing.

(4) *Basic Dyes.*—These are salts of organic bases and are chiefly used on cotton and wool. Their importance, however, for textile dyeing is diminishing with the greater usage of vat and azoic dyes.

(5) *Direct Dyes.*—These are azo compounds that can be applied directly to cotton without the use of a mordant and in certain conditions to silk and wool. Dyes belonging to this group are generally used where an inexpensive material is required since the dyed material is not likely to retain its colour over a long period because of the fugitive nature of the dyes. This undesirable characteristic of this group of dyes has now been largely eliminated by after treatment of the dyed materials or by modified methods of developing the dye in the fibre.

(6) *Mordant and Chrome Dyes.*—Alizarine and its derivatives represent this group of dyes which is becoming less important because of the cumbersome process involved in their application. They are applied to cotton and wool through the process of mordant dyeing which consists of treating the cloth with the dye in combination with metallic mordants such as salts of chromium, aluminium, iron and tin.

(7) *Sulphur Dyes.*—These are prepared by treating certain coal-tar intermediates containing nitro or amino groups or both, with sulphur and/or sodium sulphide. These are inexpensive dyes producing shades of blue, green, brown and black of which black is the most commonly used. They are applied mostly to cotton and are fast to light and washing but do not possess the same degree of fastness towards bleaching agents. Application of sulphur dyes involves the solution of the dye in sodium sulphide and its develop-

ment on the fibre from the solution by oxidation in air or by means of an oxidising agent.

(8) *Vat Dyes.*—This group of dyes can be broadly divided into two types of vat dyes, namely, anthraquinone vat dyes and indigoid vat dyes. The former are expensive dyes which produce a variety of attractive shades with superior fastness. The latter consist of indigo and allied dyes which are comparatively cheaper. The dyes are insoluble in water and must be applied in a strongly alkaline solution of sodium hydrosulphite (so called "Vat"). The dye is developed in the material after treatment in the Vat by exposure to air or by treatment with oxidising agents. These dyes are used predominantly for cotton and to a lesser extent for other textile fibres. A development in the field of Vat dyes has been the production of special dyes known as solubilised vat dyes which are derived from vat dyes by converting them into a stabilised soluble form. These dyes can be applied directly to the fibre.

(9) *Special Dyes.*—This group consists of (a) lake dyes, (b) spirit and oil soluble dyes, and (c) dyes required for food, drugs and cosmetics. Lake dyes are mainly azo compounds combined with metallic salts such as those of barium, chromium and aluminium to form pigments which are used for colouring paints and printing inks. Spirit and oil soluble dyes are similar to textile dyes but do not dissolve in water. They dissolve in oils and organic solvants and consequently find use in colouring petrol, production of shoe polish and in the paint and printing ink industries. A number of dyes used for food, drugs and cosmetics are azo derivatives similar to those used in the textile industry. The specifications required are, however, extremely rigid.

Scope of the inquiry

4. A list of dyes which are being produced in India at present and of those which are included in the manufacturing programme of the various units as approved by Government is given in Appendix III. It will be seen from this list that although the indigenous industry is producing some groups of dyes, such groups do not cover the full range of dyes required for domestic consumption. Even in the case of dyes which are produced in the country, the corresponding imported dyes are available in a large variety differing in shade, tone and degree of fastness. We consider that in determining the scope of the present inquiry the following factors should be taken into account. Firstly, when the production of a range of dyes belonging to any group is established in the country, an extension of the range within the group should not present much difficulty. Technically, the production of dyes consists of various unit operations and the equipment installed can generally be used for the production of various dyes belonging to the same group and sometimes to dyes belonging to other groups. Secondly, since each dye produced by the indigenous industry would have to compete with a variety of imported products which may differ from one another in composition only to a minor extent, it is desirable not to limit the scope of the inquiry to individual dyes only. Moreover, certain dyes may also be produced by a mixture of two or more dyes. Lastly, if only individual dyes are included in the scope of the inquiry, problems of identification of dyes and administrative difficulties in their classification for purposes of import duty

would arise. We have, therefore, decided to include within the scope of the inquiry whole groups of dyes except in two cases, *viz.*, Bismark Brown and Sulphur Black. We have decided to adopt, as far as possible, group basis for those dyes in respect of which any unit has undertaken to manufacture a large range of colours. A wide range of colours is being produced by the different units under the category of Direct Dyes and Azoic dyes. We have, therefore, included the Direct Dyes as a group and among the Azoic Dyes we have included those which are already being produced in the country, namely Fast Colour Salts, Rapid Fast Dyes and Rapidogen Dyes. Although the range of Acid Azo Dyes produced at present is not complete, we have decided to include the whole group in order to enable the manufacturers to undertake the production of other colours included in the group. Similary, we have included the whole group of solubilized Vat Dyes, as Green and Blue colours which account for the bulk of the demand in this group are being produced at present. As regards the Basic Dyes, Bismark Brown is the only dye being produced at present but since its production is only on experimental scale, we have not included this dye or the Basic Dyes as a group within the scope of the present inquiry. Among the sulphur dyes, only Sulphur Black is being produced at present and we have, therefore, included only Sulphur Black in the scope of the inquiry. We have carefully considered whether the scope of the inquiry should be enlarged further to include other groups of dyes the manufacture of which has recently been approved by Government. Sufficient data are not yet available about the various projects which have only recently been approved by Government to enable us to examine the question of grant of protection to the manufacture of these dyes. Moreover, we think that in determining the range of dyes which should be covered by a scheme of protection and assistance it will be desirable to proceed step by step so that the burden placed on the consumer is limited to what is strictly necessary for promoting and developing the manufacture of dyes in the country. The scope of the present inquiry is, therefore, confined to the following dyes:—

सत्यमेव जयते

1. Acid Azo Dyes.
2. Direct Dyes.
3. Azoic Dyes:—
    (a) Fast colour salts.
    (b) Rapid Fast Dyes and
    (c) Rapidogen Dyes.
4. Solubilized Vat Dyes.
5. Sulphur Black.

Domestic demand

5. (a) In its Report submitted in 1945, the Dyestuffs Exploratory Committee estimated the annual consumption of different types of dyes and colours as follows:—

Group of Dyes	*Annual consumption in lbs.*
Basic dyes	516,400
Acid dyes	459,900
Chromes	44,200
Other alizarines	8,800
Alizarine	1,800,900
Alizarine powder and lumps	11,000
Direct dyes	2,344,900
Sulphur dyes	3,550,300
Indigo	675,600
Vat paste	208,400
Vat powder	463,900
Brenthols	2,165,800
Indigosols	46,800
Special dyes	2,278,700
TOTAL	14,575,600

These estimates can no longer be used except as a rough guide because several changes have taken place subsequent to the publication of the report. The partition of the country has resulted not only in reduction of demand but also in shifts of demand for individual types of dyes. For example, the demand for alizarine in India at present is very small compared to the demand in pre-partition period as it was mainly used in the territories now included in Pakistan. The decline in demand for alizarine and its derivatives is also due to reasons mentioned in paragraph 3 above. Shifts in the demand from one dye to another and from one group to another occur depending upon the preference for different grades in respect of fastness, shade, ease of application and relative prices.

(b) We have received estimates of demand from various interests connected with the industry but these are based mostly on broadly classified figures of imports given in the Accounts relating to the Foreign Trade and Navigation of India. Such figures do not furnish information regarding strength of dyes and do not also give sufficient details in regard to the estimated demand for various groups and types of dyes and colours. The Textile Commissioner has furnished us with figures relating to imports of dyes into Bombay Port for three years which give a more detailed classification of dyes. The representative of the Textile Commissioner stated at the public inquiry that the imports into Bombay Port would be about 90 per cent. of the total imports into the country. This ratio may not be correct in all cases. We have also taken into account the estimates furnished by various interests concerned as well as the views expressed at the public inquiry and have arrived at the following estimates of current demand for various groups of dyes without making allowance for the strength of dyes which has particular significance in the case of vat dyes:—

	Lbs.	Lbs.
I. AZO DYES .		2,430,000
(1) Acid Azo Dyes	600,000	
(2) Basic Azo Dyes	30,000	
(3) Direct Azo Dyes :		
(*a*) Congo Red	800,000	
(*b*) Direct Dyes other than Congo Red . .	1,000,000	
II. OIL SOLUBLE DYES		22,000
III. AZOIC DYES		2,700,000
(1) Naphtols	1,300,000	
(2) Rapid Fast and Rapidogens	300,000	
(3) Fast Colour salts and Fast colour Bases . .	1,100,000	
IV. INDIGO		450,000
V. OTHER VAT DYES		900,000
VI. SULPHUR BLACK		2,800,000
VII. ANILINE SALT		400,000
		9,702,000
VIII. OTHER DYES		1,700,000
TOTAL		11,402,000

The data on which the above estimates have been based are explained below:—

I. *Azo Dyes*:

(1) *Acid Azo Dyes*.—The Dyestuffs Exploratory Committee had estimated the demand for this group at 459,000 lbs. The average quantity available in the country for consumption annually comes to 648,000 lbs. on the basis of figures of imports furnished by the Textile Commissioner and indigenous production. At the public inquiry the demand for certain individual dyes and colours falling under this group was discussed and it was agreed that the demand for Acid Orange would be about 112,000 lbs., for Acid Red, 140,000 lbs., for Acid Black 10BX 20,000 lbs. and for Metanil yellow 220,000 lbs. making a total of 492,000 lbs. To this figure an addition of about 100,000 lbs. will have to be made to include other acid yellow dyes, other acid black dyes and other acid colours for which separate estimates could not be arrived at. This would give a total of 592,000 lbs. On the basis of the above figures we have estimated the demand for Acid Azo Dyes at 600,000 lbs.

(2) *Basic Azo Dyes*.—The Dyestuffs Exploratory Committee had estimated the demand for basic dyes at 516,400 lbs. of which basic Azo dyes account for 28,200 lbs. We have adopted a figure of 30,000 lbs. as our estimate of demand for basic azo dyes.

(3) *Direct Azo Dyes*: (a) *Congo Red*.—The Dyestuffs Exploratory Committee estimated the demand at 1,198,000 lbs. This figure is, however, considered to be on the high side as Congo Red is a fugitive dye which is gradually being replaced by faster types of dyes. The demand for this material has diminished to a considerable extent

in other parts of the world but is still maintained in India in view of the preference for it owing to its low price. The total of the average imports during the last three years as given in Appendix IV and indigenous production comes to about 1,000,000 lbs. We were, however, informed at the public inquiry that imports have been excessive during recent years probably because it was feared that indigenous production would commence and imports might not be subsequently allowed freely. It may be pointed out that the average annual imports for the last seven years come to 781,000 lbs. We have, therefore, adopted an estimate of 800,000 lbs. per annum for Congo Red.

(b) *Direct Dyes other than Congo Red.*—The Dyestuffs Exploratory Committee had estimated the demand for direct dyes other than Congo Red at 1,146,900 lbs. On the basis of the information furnished by the Textile Commissioner regarding imports and indigenous production, the average quantity of direct azo dyes including Congo Red available for consumption in the country during the last three years was 1,731,000 lbs. annually. At the public inquiry, it was agreed that the demand for certain dyes and colours falling under this group might be estimated as follows:—

	Lbs.
Direct Red 12B	20,000
Direct Garnet BY	25,000
Direct Violet	25,000
Direct Blue	190,000
Direct Green	87,000
Direct Black E	224,000
Direct Black BT	170,000
TOTAL	741,000

To this, however, will have to be added the demand for those dyes and colours for which estimates were not made during the inquiry. On the basis of the estimates of the Dyestuffs Exploratory Committee, an addition of 550,900 lbs. would be necessary as stated below:—

	Lbs.
Direct Orange	94,700
Direct Yellow	154,800
Direct Brown	109,400
Benzo Purpurine	61,000
Other Reds	131,000
TOTAL	550,900

The total demand for Direct Dyes excluding Congo Red on the above basis, would therefore, appear to be 1,291,900 lbs. Adding 800,000 lbs. for the estimated demand for Congo Red, the total estimated demand for Direct Dyes including Congo Red works out to about 2·1 million lbs. This figure is, however, much in excess of the estimate based on the information furnished by the Textile Commissioner.

After examining these estimates, we have decided to adopt an estimate of 1·8 million lbs. for the demand for direct dyes including Congo Red. The break-up of this estimate would be as follows:—

	Lbs.
Congo Red	800,000
Direct Dyes excluding Congo Red	1,000,000
TOTAL .	1,800,000

II. *Oil Soluble Dyes*:

No information is available regarding the imports of oil soluble dyes and on the basis of estimates furnished by producers and importers we have adopted a figure of 22,000 lbs.

III. *Azoic Dyes*:

The estimates made by the Dyestuffs Exploratory Committee in regard to Azoic Dyes could not be used as a guide as there has since been a substantial increase in the consumption of these dyes. This group contains items like fast colour bases, naphthols and their derivatives. Both fast colour bases and naphthols are usable either directly for the purpose of dyeing or for the production of rapid fast and rapidogen dyes. The bases are used for the production of fast colour salts also. In the Trade Accounts, imports of azoic dyes are recorded under 'Coupling Dyes of the Naphthol Group' and this heading is sub-divided into Naphthols, Rapid fast colours (rapid salts), Bases and other salts. This classification is not satisfactory as there is some possibility of overlap between rapid salts and other salts. Further, there is a wide discrepancy in the figures of imports published in the Accounts relating to the Foreign Trade and Navigation of India and the figures furnished by the Textile Commissioner. While the average total imports of azoic dyes for the last three years according to the figures given in the accounts relating to the Foreign Trade and Navigation of India amount to 3·07 million lbs. per annum, the figure as indicated by the Textile Commissioner comes to 2·14 million lbs. We have, however, attempted to make a rough estimate of demand for azoic dyes which comes to 2,700,000 lbs. as follows:—

(1) *Naphthols*.—The average annual imports for the last three years shown in Appandix IV amount to 1,220,000 lbs. while according to the figures furnished by the Textile Commissioner, the annual imports come to 904,000 lbs. After discussion with the representatives of various interests present at the inquiry we have adopted an estimate of 1,300,000 lbs. in view of the growing tendency towards the use of azoic dyes.

(2) *Rapid Fast and Rapidogen Dyes*.—The average imports into the country and indigenous production for the last three years come to 303,241 lbs. per annum. The information furnished by the Textile Commissioner, however, indicates a figure of 201,511 lbs. The All India Dyestuffs Manufacturers' Association in its written memorandum has stated that the demand for this group of dyes may be estimated at 264,000 lbs. while the Association of Indian Importers of Dyestuffs has estimated it at 291,200 lbs. In view of the increasing tendency towards the use of azoic dyes, we have estimated the demand at 300,000 lbs.

(3) *Fast Colour Bases including Fast Colour Salts.*—The average imports of fast colour bases during the last three years as shown in Appendix IV are 869,000 lbs. per annum. An addition to this has to be made, however, for bases imported in the form of fast colour salts. The demand for fast colour salts was estimated at 400,000 lbs. on the basis of information furnished by the All India Dyestuffs Manufacturers' Association and the Association of Indian Importers of Dyestuffs in their memoranda as well as the opinion expressed by the representatives of the interests concerned at the public inquiry. This quantity of fast colour salts would be roughly equivalent to 100,000 lbs. of fast colour bases. On the basis of the above information and in view of the trend towards large consumption of azoic dyes as envisaged by us, we have adopted an estimate of 1,100,000 lbs. for fast colour bases including bases required for fast colour salts.

IV. *Indigo*:

The average imports during the last three years as furnished by the Textile Commissioner come to 356,400 lbs. while the Accounts relating to the Foreign Trade and Navigation of India show that average imports were 452,000 lbs. per annum during this period. We have adopted an estimate of 450,000 lbs.

V. *Other Vat Dyes*:

The estimation of demand for dyes in this group is complicated by the fact that vat dyes are imported in the form of powder as well as paste. We were advised that the powder equivalent of the dyes in the form of paste could be taken as one fourth of the quantity of paste The powders, however, are imported in various strengths in regard to which no detailed information is available. We have, therefore, estimated the demand only in terms of powder vat dyes. The average imports of paste during the last three years according to the information given in the Accounts relating to the Foreign Trade and Navigation of India come to 226,000 lbs. while those of powder come to 892,000 lbs. Converting the quantity of paste in terms of powder, we arrive at a figure of 56,500 lbs. The total figure for powder, therefore, works out to 948,500 lbs. After discussion at the public inquiry, we have adopted an estimate of 900,000 lbs. of powder. This includes vat dyes required for the production of solubilized vat dyes, th edemand for which we have estimated at about 150,000 lbs. after taking into consideration the figures of imports furnished by the Textile Commissioner and of indigenous production during the last three years.

VI. *Sulphur Black*:

The average imports of sulphur Black during the last three years come to 2,675,000 lbs. There seems to be a discrepancy in the figures furnished by the Textile Commissioner according to which, imports of sulphur dyes were about 1,700,000 lbs. per year. The Association of Indian Importers of Dyestuffs has furnished an estimate of 2,800,000 lbs. in its written memorandum. After discussion with the interests concerned at the public inquiry, we have adopted an estimates of 2,800,000 lbs.

VII. *Aniline Salts:*

The average imports during the last three years come to 392,000 lbs. per annum. We have, therefore, estimated the demand at 400,000 lbs.

VIII. *Other Dyes:*

The Accounts relating to the Foreign Trade and Navigation of India include a group of miscellaneous dyes under the item "Others" whose imports come to 3,100,000 lbs. on an average during the last three years. Some of the principal dyes included in this item are Azo Dyes other than Congo Red and Metanil Yellow, which are classified separately. The quantity is, however, so large that it may be assumed that apart from Azo Dyes this group includes various other unclassified dyes. The total quantity under the item "Others" and Azo Dyes, namely, Congo Red and Metanil Yellow (whose average imports come to one million and 170,000 lbs. respectively) is 4·27 million lbs. We have estimated the demand for Azo Dyes at 2·43 million lbs. In arriving at this estimate we have assumed that the demand for Congo Red would be 200,000 lbs. lower than the actual average imports during the last three years. The quantity of dyes under the item "Others" excluding Azo Dyes would thus be 1·64 million lbs. We have, therefore, adopted the estimate of 1·7 million lbs. under the item "Other Dyes", which would be made up of items not covered in the classification such as other sulphur dyes, acetate rayon dyes, acid dyes other than acid azo dyes, basic dyes other than basic azo dyes, mordant and chrome dyes, special dyes, etc.

The total demand for dyes is thus estimated by us at 11,402,000 lbs. The average imports during the last three years, however, were 12,023,000 lbs. per annum. The difference of 6·21 lakh lbs. is due to two reasons: firstly, we have not included alizarine in our estimate as the demand for it has become negligible in recent years and secondly, the figure for azoics has been altered because the demand is expressed in terms of fast colour bases instead of fast colour salts. Similarly, the variation in the case of vat dyes is due to expressing the quantity of paste in terms of powder.

Present position of the industry.

6. (a) Production of synthetic dyes in India did not start until 1940 when Associated Research Laboratories commenced the production of Rapid Fast Dyes on a small scale in Bombay. In 1941, an exploratory committee to consider ways and means for the manufacture of synthetic dyes was set up by the Government of India. In its Report submitted in 1945, the Committee recommended the establishment of a dyestuff industry in India as early as possible. The plan for the dyestuff industry envisaged by the Committee comprised (a) the manufacture of selected 51 dyes within a period of about five years; (b) the manufacture of some of the intermediates during this period of five years; (c) the production of all the intermediates required for the 51 dyes within ten years; and (d) the production of all the dyes in substantial demand in the country together with all the necessary intermediates within a period of 15—20 years. Subsequently, negotiations took place between Tata Sons, Limited and Imperial Chemical Industries Ltd., for establishing a dyestuff industry in India, but did not yield any fruitful result. In 1947, Atul Products Ltd., were registered with the object of manufacturing Azo Dyes, including Congo Red, Sulphur Black and Alizarine in collaboration with the Calco Division of the American

Cyanamid Company. During the last five years a few small factories have been set up for the production of Rapid Fast Dyes. Most of these, however, have a limited capacity and produce a limited range of dyes.

(b) According to the information received by us, the dyestuff industry in India consists at present of eight units. Of these, Atul Products, Ltd., Bulsar and Associated Research Laboratories, Bhatghar, produce a fairly large range of dyes and account for most of the present capital investment in the dyestuff industry. The present position of the various units is briefly described below:—

(1) *Atul Products Ltd., Bulsar.*—The Company was registered in 1947 and commenced production of dyes in September, 1952. The authorized capital of the Company is Rs. 5 crores, while the subscribed and paid up capital is Rs. 1 crore. Loans amounting to Rs. 1·25 crores have been raised by the Company. Ten per cent. of the share capital has been taken up by the American Cyanamid Company. The original value of the fixed assets of the Company which will be used for the manufacture of drugs as well as dyes is Rs. 1,60,46,000. The average number of workers employed by the Company during 1952 was 390 and during 1953, 447. The Company is producing at present Azo Dyes of Direct and Acid types and Sulphur Black. The ultimate aim of the Company is to produce a variety of dyes for which facilities such as water, steam and electricity have already been provided. In view of the decline in demand for Alizarine in recent years, the Company has decided not to undertake its production for which necessary equipment has already been installed. There is no research department, but the Company has a nucleus of research staff of chemists who are at present doing only development work. It has a well-equipped laboratory for testing raw materials and finished products. It has an arrangement with the American Cyanamid Company for obtaining advice and expert help from them whenever required.

The Company has furnished to us a note setting out its plan for manufacturing certain end products as well as intermediates during the next five or ten years. The plan is divided into the following five parts:—

(i) Installation of a semi-commerical scale pilot plant with a capacity of approximately 1 cwt. batch size. The cost of this plant is estimated roughly at Rs. 2 lakhs.

(ii) Expansion and addition of end products such as Sulphur Black, Naphthols, Bases, Azo Dyes, Medicinal Dyes, Vat Dyes, etc. and pharmaceuticals. The investment required for this part is estimated approximately at Rs. 1 crore.

(iii) Manufacture of complex intermediates like Beta Hydroxy Naphthoic Acid.

(iv) Manufacture of primary intermediates like Chlorobenzene, Aniline etc. The programme of manufacture of intermediates (iii) and (iv) is estimated to cost about Rs. 2 crores.

(v) Installation of basic chemical plants for the manufacture of chemicals like caustic soda, sulphuric acid and nitric acid. The investment required for caustic soda and sulphuric acid plants is estimated at about Rs. 60 lakhs.

(2) *Associated Research Laboratories, Bhatghar*.—This is a partnership concern and was registered in 1940. It commenced production of dyes of Rapid Fast type in the same year at the firm's laboratory in Bombay. When the activities increased the factory was shifted to Bhatghar near Poona. The capital employed by the firm is Rs. 15 lakhs. The original value of the fixed assets is about Rs. 8,00,000. The average number of workers employed in the factory during 1953 was 90. The firm is at present manufacturing almost a complete range of Rapid Fast Dyes, Rapidogens and Developing Salts. It is also manufacturing Solubilized Vat Dyes of Green IB, and Blue 04B types.

Of the remaining six units, one, *viz.*, National Dyes, Bombay, is a proprietary concern; four units, *viz.*, National Chemical Industries, Delhi, India Chemical Industries, Amritsar, Durga Laboratories, Bombay and Shri Dyes and Chemical Industries, Poona are partnership concerns and one, *viz.*, India Dyechem Industries, Delhi, is a private limited company. The total capital employed in all the six units is about Rs. 7 lakhs. Their production covers a limited range of Rapid Fast Dyes, Fast Colour Salts, Azo Dyes and Oil Soluble Dyes besides small quantities of Methyl Violet, Induline and Nigrosine.

Capacity and Production.

(c) The range of products manufactured in the country at present includes (i) Acid Azo Dyes, (ii) Direct Azo Dyes, (iii) Sulphur Black, (iv) Rapid Fast Dyes, (v) Rapidogens, (vi) Fast Colour Salts, (vii) Solubilized Vat Dyes and (viii) Small quantities of certain Oil Soluble Dyes, Methyl Violet, Induline and Nigrosine. The total installed capacity and actual production of the above groups of dyes in the country during the years 1951 to 1953 were as follows:—

Group of Dyes	Total installed capacity	Actual production		
		1951	1952	1953
1	2	3	4	5
	Lbs.	Lbs.	Lbs.	Lbs.
1. Azo Dyes	2,080,640	Nil.	65,191	707,491
2. Sulphur Black . .	1,000,000	Nil.	30,924	431,303
3. Rapid Fast Dyes . .	292,000	25,651	43,650	144,288
4. Rapidogen Dyes . . .	152,000	2,767	5,960	36,391
5. Fast Colour Salts . .	660,800	3,130	16,375	92,116
6. Solubilised Vats . .	150,000	4,737	7,090	64,116
7. Oil Soluble Dyes . .	37,032	Nil.	816	5,122
8. Others	79,000	Nil.	1,429	4,300

The following statement gives the annual rated capacity of the seven units which furnished information to us and actual production of various groups of dyes of each unit during each of the years from 1951 to 1953:—

Name of unit	Name of product	Annual installed capacity	Actual production		
			1951	1952	1953
1	2	3	4	5	6
		Lbs.	Lbs.	Lbs.	Lbs.
1. Atul Products Ltd., Bulsar.	I. Azo Dyes : . .	2,000,000	Nil	61,664	707,491
	(*a*) Acid Azo . .		,,	31,906	159,366
	(*b*) Direct Azo . .		,,	25,743	487,415
	(*c*) Congo Red . .		,,	4,015	58,582
	(*d*) Basic Azo . .		,,	Nil	2,128
	II. Sulphur Black .	1,000,000	,,	30,924	431,303
2. Associated Research Laboratories, Bhatgar	I. Papid Fast Dyes .	76,000	8,392	7,700	37,529
	II. Repidogen Dyes .	152,000	2,767	5,960	36,391
	III. Fast Colour Salts .	644,000	3,130	16,375	91,419
	IV. Solubilised Vats .	150.000	4·737	7,090	64,116
	(*a*) Green I B . .		..	..	51,711
	(*b*) Blue 04B . .		..	..	12,405
	V. Oil Soluble Dyes .		..	..	184
3. National Chemical Industries, Delhi.	Rapid Fast Dyes . .	120,000	14,176	30,815	87,957
4. National Dyes, Bombay.	I. Rapid Fast Dyes .	30,000	59	1,479	8,144
	II. Fast Colour Salts .	16,800	Nil	Nil	582
5. Durga Laboratories, Bombay.	Rapid Fast Dyes . .	66,000	3,024	3,656	10,658
6. India Chemical Industries, Amritsar.	I. Azo Dyes . .	80,640	Nil	3,527	N.A.
	II. Oil Soluble Dyes .	4,032	,,	816	,,
	III. Methyl Violet .	9,000	,,	1,429	,,
7. India Dyechem Industries Ltd., Delhi	I. Oil Soluble Dyes .	33,000	,,	Nil	*4,938
	II. Induline . .	10,000	,,	,,	*721
	III. Nigrosine . .	60,000	,,	,,	*3,579

* Productions started in April 1953 and only figures for April-May 1953 available.
N.A.—Not Available.

Programme of expansion and development.

(d) According to the information recently furnished to us by the Development Wing of the Ministry of Commerce and Industry, the following programmes of expansion and development of the manufacture of the different types of dyes have been approved by the Government of India:—

(1) *Azo Dyes.*—Atul Products Ltd., have been permitted to expand their capacity for azo dyes to the extent of 443,520 lbs. per annum. The licence for expansion is dated 4th January 1954. The following new range of dyes is permitted against this expansion:—

Dyes	*Annual Capacity (000 lbs)*
Chrysophenine	112 0
Direct Fast Violet 2RL	11 2
Direct Fast Violet RL	22 4
Direct Fast Orange SE	22 4
Direct Fast Yellow 5G Conc.	22 4
Direct Brown M	22 4
Delta Purpurine 5B Conc	33 6
Meteril Yellow	168 0
Direct Fast Red F	11 2
Direct Violet N	6 72
Direct Carnet 2RB	11 2
	443 52

These are patented dyestuffs of Gasellschaft fur Chemische Industries, Basel (hereinafter described as Ciba) and Ciba's collaboration and technical assistance have been secured by Atul Products, Ltd., for their manufacture. It is expected that production will commence early in 1955. No additional capital will be employed in respect of this expansion.

(2) *Vat Dyes.*—Indian Dyestuff Industries, Bombay, have been granted a licence for the production of Vat Dyes. Their programme provides for the production of the following vat dyes in two stages:—

First stage spread over a period of 3 years.

	Lbs.
Vat Jade Green FFB	60,000
Vat Black BB	24,000
Vat Dark Blue BO	24,000
Vat Blue BC	30,000
	138,000

Second stage.

Vat Blue RSN	150,000
Vat Violet RR	15,000
Vat Violet 4R	15,000
Vat Blue 2B	18,000
	198,000

To begin with, the dyes will be manufactured from imported anthraquinone but steps will be taken to produce anthraquinone later from indigenous naphthalene and benzene. No foreign technical assistance has been secured. The capital employed would be Rs. 15 lakhs. The licence was issued to the firm on 9th December, 1953. It is expected that production will commence some time in 1955.

Atul Products, Ltd., Bombay, have also been permitted by a licence issued on 24th June, 1954, to establish a new industrial undertaking with an installed capacity for the manufacture of 340,000 lbs. of Jade Green Vat dyes at single strength, per month, in collaboration with Imperial Chemical Industries, Ltd. The manufacture of these dyes will be based on imported benzanthrone. It is expected that production will commence in about 15 months time. The issued capital of the Company will be Rs. 50 lakhs and will be held 50 per cent. by Imperial Chemical Industries, Ltd., and 50 per cent. by Atul Products, Ltd.

(3) *Naphthols.*—Atul Products, Ltd., were allowed on 24th December 1953 to manufacture 448,000 lbs. per annum of the following Naphthols:

	Annual Capacity (000 lbs.)
Naphthol AS	156·2
Naphthol AS : BS	89·6
Naphthol AS : SW	56·0
Naphthol AS : BO	33·6
Naphthol AS : TR	44·8
Naphthol AS : G	56·0
Naphthol AS : D	11·2
Say	448·0

Subsequently, the approved capacity was increased to 672,000 lbs. per annum on 4th March, 1954. Manufacture will be undertaken in collaboration with the American Cyanamid Company of U.S.A. A condition has been imposed that Atul Products, Ltd., should produce B. O. N. acid and Beta Naphthol in India, or at least purchase whichever may be ultimately available to them from other producers in the country. It is expected that production will commence early in 1955. The firm is taking steps for the production of B. O. N. Acid.

Amritlal & Co. Ltd., Bombay, have also been allowed to manufacture 1,344,000 lbs. of the following naphthols:—

	Annual capacity (000 lbs.)
Naphthol AS	560
Naphthol AS : BS	280
Naphthol AS: BO	112
Naphthol AS : SW	134·2
Naphthol AS : OL	56
Naphthol AS: TR	67·2
Others	134·4
Say	1,344·0

The firm proposes to commence production straightaway from imported Beta Naphthol, and to produce it from Naphthalene as soon as possible. The authorised capital of the company would be Rs. 1 crore. The immediate capital to be issued will be Rs. 50 lakhs. Hilton Davis Chemical Co. of U.S.A. are collaborating with Amritlal & Co. in this scheme and Hilton Davis Chemical Co. will contribute 10 per cent. of the initial capital.

(4) *Fast Colour Bases.*—Amritlal & Co., Bombay, have also been permitted to manufacture 672,000 lbs. of Fast Colour Bases, along with Naphthols, in two stages.

The following items of Fast Colour Bases are proposed to be manufactured in the first stage:

	Annual capacity (000 lbs.)
Bordeaux GP	112·0
Red GL	56·0
Orange GC	67·2
Garnet GBC	67·2
Red TR	33·6
Scarlet GG	33·6
Red RC	56·0
	425·6

(5) *Fast Colour Salts.*—Atul Products Ltd. have been permitted to manufacture 300,000 lbs. per annum of the following fast colour salts:—

	Annual capacity (000 lbs.)
Scarlet R & RC Salt	60
Scarlet G Salt	5
Scarlet GG Salt	10
Red TR Salt	10
Red B Salt	50
Red GL Salt	10
Red RC Salt	20
Bordeaux GP Salt	30
Corinth B Salt	10
Garnet GBC Salt	35
Blue B Salt	25
Blue BB Salt	11
Orange GR Salt	5
Orange GC Salt	4
Yellow GC Salt	9
Violet B Salt	6
	300

(6) *Rapidogens.*—Atul Products Ltd., have been permitted to establish capacity of 150,000 lbs. of rapidogens per annum in collaboration with Ciba. The following patented dyestuffs—Cibagenes—will be manufactured:

सत्यमेव जयते

	Annual capacity (000 lbs.)
Cibagene Yellow RA	15
Cibagene Orange 3 RA	15
Cibagene Bordeaux RA	40
Cibagene Red	40
Cibagene Blue	40
	150

Amritlal & Co., Bombay in their scheme for Naphthols and Fast Colour Bases, have also included manufacture of 'Spectrolenes' a special type of rapidogens. The capacity envisaged is 224,000 lbs. per annum.

(7) *Sulphur Black.*—Atul Products Ltd. have been permitted to expand their capacity (existing) for sulphur black from 1 million lbs. to 2 million lbs.

The scheme for the manufacture of 1 million lbs. per annum of sulphur black by Hickson & Patel has also been approved. Hickson & Welch Ltd., of U.K. will participate in this venture. The capital of the undertaking is Rs. 5 lakhs, out of which shares of the value of Rs. 1,55,800 have been allotted to Hickson & Welch Ltd. who will provide the know-how. It is expected that production of sulphur black by Hickson & Patel will commence by the end of this year.

Manufacture of sulphur black by both Atul Products Ltd. and Hickson & Patel will be based on imported di-nitro-chloro-benzene for the present.

Raw materials and intermediates.

7. (a) *Basic Raw Materials.*—The basic raw materials required for the dyestuff industry are as already stated in paragraph 3 above, benzene, toluene, naphthalene, anthracene, cresols, carbazole and pyridine. These are obtained from coal gas, light oil and coal tar which are produced in the process of carbonisation of coal. In India, carbonization of coal is undertaken mainly for the manufacture of coke for metallurgical use. The productive capacity and actual production of the basic organic chemicals, namely, benezene, toluene and naphthalene during the last three years are given below:

Chemicals	Productive capacity	Actual production		
		1951	1952	1953
Benzene (gals.) . .	88,500	31,499	38,828	49,939
Toluene (gals.) . .	309,500	171,971	291,707	272,123
Naphthalene (tons) . .	942	765	667	586

The existing capacity of the coal carbonization industry in the country yields coal tar far in excess of the quantity required to be utilized for the production of basic coal tar chemicals. Only a small part of the coal tar produced is utilized for the recovery of chemicals. Moreover, the quality of the basic coal tar chemicals is not maintained at the high standard of purity required for use in the dyestuff industry. It is essential that the coal tar distillation industry should be established in the country so that it will meet fully the requirements of the dyestuff industry. There is only a limited offtake of basic coal tar chemicals at present but the demand may be expected to increase considerably with the progress of various industries based on organic chemicals of which the dyestuff industry would be the largest single industry. The demand for basic coal tar chemicals may be expected to increase gradually as steps are taken by the manufacturers of dyestuffs to implement their schemes to produce intermediates within the country. Close co-ordination between the development of the dyestuff industry and the coal tar distillation industry would be necessary and we recommend that Government should initiate an investigation to determine the lines on which such development should be planned and the measures required to encourage such planned development.

In addition to the basic coal tar chemicals, it would be necessary to develop various solvents and chemicals based on alcohol and acetylene. Alcohol is being manufactured in the country in sufficient quantities at present and is exempt from excise duty when it is required for industrial use. Acetylene will be available from indigenous sources when the plant for the manufacture of calcium carbide which is being set up near Asansol goes into production. The petroleum refineries which are being established in India, will be a potential source of gases which could be processed into a number of important intermediates. The development of all these basic resources will have to be co-ordinated for the progressive manufacture of the intermediates required by the dyestuff industry.

The prices of basic organic chemicals in India are substantially higher than those at which similar chemicals are available to the manufacturers of dyes in other countries. The following recent quotations of prices of benzene, toluene and naphthalene prevailing in India, U.K. and U.S.A. indicate the disadvantage of the Indian dyestuff industry in this respect:—

Raw materials	India	U.K.	U.S.A.
	Rs.	Rs.	Rs.
Benzene (per gallon) .	4 8 0	3 5 0	1 12 0
Toluene (per gallon) .	5 0 0	3 1 0	1 10 0
Naphthalene (per ton) .	1,260 0 0	825 0 0	1,176 0 0

It is obvious that if the manufacture of dyestuffs in India is to be developed on a competitive basis, the availability of basic raw materials at much lower prices will have to be ensured. The main reason for the higher prices at present is the small volume of production.

(b) *Intermediates*.—The basic materials are converted into a large number of intermediate products by treatment with inorganic heavy chemicals like sulphuric acid, nitric acid, hydrochloric acid, chlorine, caustic soda, soda ash, etc. as well as by interaction between various products. A number of these intermediates, apart from being utilized in the dyestuff industry, form the basis of other organic chemical industries, such as plastics, pharmaceuticals, rubber chemicals, etc. Some intermediates like nitrobenzene, aniline, chlorobenzene, alpha and betanaphthols, anthraquinone, etc. are primary intermediates, because they are derived directly from the basic organic chemicals and are produced in bulk for conversion into complex intermediates or finished dyes. At present, primary intermediates are not used by the dyestuff industry in India, but the manufacture of dyes consists of the final stages of reaction in which complex intermediates are processed through one or two stages. Certain intermediates such as those used in the manufacture of the Azoic group of dyes or of solubilized vat dyes, are materials which can be directly used for the process of dyeing by the ultimate consumer. Complex intermediates are at present imported and no steps have been taken so far by the industry to produce them from primary intermediates. In paragraph 15(b) below, we have stressed the necessity for the industry to undertake the manufacture of a number of primary and complex intermediates and if the development takes place on these lines, the pattern of raw materials and intermediates is likely to change in the future resulting in greater use of basic organic chemicals as well as inorganic heavy chemicals.

We give below a list of intermediates used in the manufacture of the dyes which are included in the scope of the present inquiry:—

(a) *Intermediates used specifically for the manufacture of dyes:*

1. Para Nitraniline.
2. Amino Azo Benzene Hydrochloride.
3. Sulphanilic Acid.
4. Benzidine Di-hydrochloride.
5. Sodium Naphthionate and Naphthionic Acid.
6. Neville & Winther's Acid.
7. Rhoduline Acid (Di-J Acid).
8. J Acid Urea.
9. Para Amino Acetanilide.
10. Dinitro Chlorobenzene.
11. Meta Phenylene Diamine.
12. Gamma Acid.
13. Meta Toluylene Diamine.
14. Chicago Acid.
15. H. Acid.
16. G. Salt.
17. Laurent's Acid.
18. Stabilizers for Azoic Dyes (Methyl Taurine and Sarcosin etc.).

(b) *Intermediates used for the manufacture of dyes which also find application otherwise.*

1. Salicylic Acid.
2. Acetic Acid.
3. Aniline and Aniline Salt.
4. Beta Naphthol.
5. Phenol.
6. Pyridine.
7. Red R Base (4 Chloro-O-anisidine)
8. Red B Base (5 Nitro-2-anisidine).
9. Blue B Base (Dianisidine).
10. Scarlet GG Base (2 : 5 dichloroaniline).
11. Scarlet R Base (4 Nitro-2-anisidine).
12. Orange GR Base (O-Nitroaniline).
13. Yellow GC Base (O-Chloroaniline).
14. Bordeaux GP Base (3 Nitro-para-anisidine).
15. Naphthol AS.

16. Naphthol ASG.
17. Naphthol AS: BS.
18. Red KB Base (4 Chloro-O-Toluidine).
19. Red TR Base (5 Chloro-2-Toluidine).
20. Blue R Base.
21. Blue BB Base (4 Benzamido-2:5-Diethoxyaniline).
22. Scarlet G Base (4 Nitro-O-Toluidine).
23. Violet B Base (6 Benzamido-4-Methoxy-Meta-Toluidine).
24. Orange GC Base (Meta Chloroaniline).
25. Para Toluidine Base.
26. Naphthol AS: OL.
27. Naphthol AS: NN.
28. Naphthol AS: LB.
29. Naphthol AS: GR.
30. Indanthrene Vat Green.
31. Indanthrene Vat Blue.

(c) *Inorganic chemicals.*—There are at present a number of inorganic chemicals which are not produced in the country in sufficient quantities to meet the requirements of the consuming industries. The expansion of such industries will, therefore, have to be co-ordinated with the development of the dyestuff industry. There is sufficient capacity in the country to meet the requirements of the dyestuff industry in respect of certain chemicals like sulphuric acid, hydrochloric acid, nitric acid, common salt, sodium bichromate and chlorine. As regards other inorganic chemicals, like soda ash, caustic soda, ammonia and sodium sulphide, the consuming industries have, however, still to depend upon imports for a part of their requirements. Moreover, certain inorganic chemicals like caustic potash, sodium nitrite and sodium sulph-hydrate are not being produced in the country. Expansion of production of inorganic chemicals, such as soda ash, caustic soda and sodium sulphide and production of chemicals like caustic potash, sodium nitrite, etc. are, therefore, necessary to meet the requirements of dyestuff and other industries.

The prices of indigenously produced inorganic chemicals like those of organic chemicals are considerably higher than the prices of corresponding products in foreign countries. The following statement shows the comparative prices of certain inorganic chemicals in India, U.K. and U.S.A.:—

Chemicals	*India* Rs.	*U.K.* Rs.	*U.S.A.* Rs.
Sulphuric acid (per ton)	210	134	76
Nitric acid (per ton)	1,400	480	518
Hydrochloric acid (per ton)	300	250	140
Sodium hydroxide (per ton)	700	360	338
Soda ash (per ton)	450	135	223

The importance of the inorganic heavy chemicals in the manufacture of dyes is bound to increase, as production is progressively developed from basic raw materials and intermediates. These chemicals constitute as much as 85 per cent. of the total quantity of raw materials required for the manufacture of intermediates. It is, therefore, essential that a plan for expanding the production of these chemicals as a necessary complement to a programme for manufacture of intermediates is formulated so that these chemicals should be available to the indigenous dyestuff industry in sufficient quantities and at reasonable prices.

Process of menufacture

8. Dyes are produced by a series of chemical reactions, such as nitration, reduction, halogenation, sulphonation, diazotisation, etc. as a result of which, the basic organic chemicals are converted by stages into primary intermediates, complex intermediates and finally into finished dyes. The processes involved depend upon the stage from which the manufacture is undertaken. At present, the production of dyes is undertaken only from imported complex intermediates so that the amount of processing required is limited. The processes employed at present in the production of Azo dyes, Stabilized Azoic dyes, Solubilized Vat dyes and Sulphur Black are described below:—

(i) *Azo dyes (Direct dyes, Acid dyes and Basic dyes).*—An amine component is diazotised by the addition of sodium nitrite and hydrochloric acid. A solution of the coupling component is added and mixed under controlled conditions of temperature, pH and volume. The dye which is formed, as a result of the coupling reaction is salted out with common salt, filtered, washed, dried, ground and blended. In the case of complex Azo dyes, the product from one coupling reaction is again made to react with a diazotised amine or another coupling component.

(ii) *Stabilised Azoic Dyes.*—This group consists of components, namely, naphthols, fast colour bases and fast colour salts as well as stabilised azoic dyes like rapid fast dyes and rapidogen dyes. The process of manufacture employed for fast colour salts, rapid fast dyes and rapidogen dyes is as follows:—

(a) *Fast Colour Salts.* These salts are manufactured by diazotisation of an amine base and stabilization by zinc chloride or other stabilizing agent. In the process of dyeing, the developing salt is applied to the fabric and combined with a coupling component.

(b) *Rapid Fast and Rapidogen Dyes.*—A full range of colours is manufactured in these series by diazotization of base, stabilization and addition of the coupling component which consists of one of the naphthols. The components in the dyes as applied to the fabric are stable in alkaline media and combine on acidification to develop the dye.

(iii) *Solubilized Vat dyes.*—Since the application of Vat dyes ordinarily requires solubilization by reduction and subsequent oxidization after application to the fabric, the solubilized vat dyes have been developed to avoid the laborious process. These dyes are manufactured by reduction of the vat dyes, preparation of the sulphuric esters and isolation of the dyes which are subsequently standardized.

(iv) *Sulphur Black.*—Dinitrochlorobenzene is treated with caustic soda to form the phenolate. Sodium polysulphide formed by combination of sodium sulphide and sulphur is added to the phenolate and the resulting mixture is aerated to separate the dye. The filtered dye is re-dissolved in sodium sulphide solution and the dye isolated in a pure form, aged, ground and blended.

Quality of the indigenous dyes

9. The principal qualities required in dyes are strength of the dye, brightness of colour, shade and fastness to washing, bleaching, exposure to light, rubbing, etc. In the absence of generally recognized standards, dyes are tested for strength and shade by actually conducting experimental dyeing with the dye to be tested against a sample of dye which is recognized as standard in the trade. The results of such examination are judged only qualitatively. In their written memoranda, it was stated by the Millowners' Association of Madhya Bharat and Saurashtra that the quality of the indigenous dyes was not found comparable to that of imported dyes. The Ahmedabad Millowners' Association also stated that the quality of the indigenous product needed improvement. Apart from the textile industry, which consumes the bulk of dyes, there are other industries, such as paper, paint, leather, etc. which also use dyes. The Indian Paper Makers' Association and the Paint Federation have emphasized the need for improving the quality of indigenous dyes, although they have admitted that their experience of indigenous dyes has been limited. We understand that many importers have recently been purchasing dyes from indigenous sources in order to sell them in the retail market after blending and shading. We were informed at the public inquiry that some of the prominent foreign companies in India are also purchasing indigenous dyes for distribution. It was stated by the representatives of these companies that indigenous dyes were found to be generally satisfactory although in the case of a few dyes deficiency was noticed in respect of strength, brightness and shade. As regards rapid fast and rapidogen dyes, it was pointed out that they were unstable in storage and their strength was inconsistent. The representative of Atul Products, Ltd. stated that their dyes were manufactured according to the standards of their foreign associates, namely, American Cyanamid Company. He admitted that there might be certain deficiencies in their products because the quality of intermediates used by them was not always of uniform standard but as their process of production was being standardised, these deficiencies would be removed. He further stated that they had already made considerable progress in this direction and would continue to improve the quality of their products as they gained further experience in their manufacture. It was stated by the representative of Associated Research Laboratories that they standardized their products on the basis of the competitive foreign dyes. From the evidence received by us, it appears that the quality of dyes produced in the country is generally satisfactory, but there is room for improvement in respect of stability and consistency in strength and shades. The representative of Associated Research Laboratories informed us at the public inquiry that they had their products tested by the Department of Chemical Technology, Bombay. The representative of the Department of Chemical Technology, however, pointed out that the findings of

the Department were based on tests carried out with small samples of dyes supplied by Associated Research Laboratories. These were found to be satisfactory, but in the absence of bulk sampling and bulk dyeing trials, the Department was not in a position to express any definite opinion. We desire to emphasize in this connection the importance of an independent assessment of the quality of the indigenous dyes and we recommend that Government should make the necessary arrangements for the selection of samples of indigenous dyes by an independent agency and for the testing of their quality by a well-equipped institution.

(b) The absence of generally accepted standards of strength of dyes in the international trade causes difficulties in assessing the customs duties and the quantity of imports. We suggest that the Indian Standards Institution should go into this question in consultation with the producers and importers of dyes and try to evolve standards of strength with reference to which the actual strength of indigenous or imported dyes can be determined.

Import control policy and imports.

10. (a) Restrictions on imports of dyes have been imposed on balance of payments considerations and the import control policy in this regard has been announced by Government from time to time. Imports of dyes from soft currency areas were licensed freely in the first half of 1951 and were placed on Open General Licence for soft currency countries during the second half of 1951. General licences were granted on quota basis during both these periods. During the first half of 1952 imports of coal tar dyes from soft currency countries were continued on O.G.L. while general licences were issued on a more restricted quota basis. During July—December 1952, no licences were granted for import of dyes derived from coal tar and coal tar derivatives. During 1953, general licences were issued for import to the extent of 20 per cent. of half of best year's imports while quotas for soft currency countries were 75 per cent. in the first half of 1953 and 100 per cent. in the second half. Since July—December, 1952, licences for solubilized vat green IB and blue 04B have been granted only to actual users, whereas no imports of rapid fast dyes have been allowed since January—June, 1953. By a special notification issued on 18th December, 1953, the validity of the unutilized licences for July—December, 1953, was restricted so as to exclude fast colour salts (developing salts) in addition to rapid fast dyes and solubilized vat dyes green IB and blue 04B. Further, not more than 3 per cent. of the face value of the licences could be utilized for the import of (a) rapidogens, (b) acid dyes—acid orange, acid fast red, black and crocein scarlet, (c) direct dyes—blue, brown, red, green, black, garnet, violet and (d) sulphur black. During January—June, 1954, the policy for the issue of general licences and soft currency licences was continued on the same basis as for July—December, 1953 but it was laid down that not more than 5 per cent. of the face value of licences could be utilized for the import of (a) Rapidogens, (b) Acid Dyes, namely, acid orange, acid fast red, acid black, acid scarlet, (c) direct dyes, *viz.*, blue, brown (including khaki), red, green, black, garnet and violet and (d) sulphur black. Further, not more than one third of this 5 per cent. of the face value was allowed to be used for imports of sulphur black and not more than one-sixth for

imports of direct red. The policy for the licensing period July-December, 1954 for dyes derived from coal tar and coal tar derivatives used in any dyeing process (other than Dimethylaniline, Rhodamine and Rhodine, which continue to be on O.G.L. for soft currency countries upto 30th September, 1954) is that general licences are granted upto 20 per cent. of half of best year's imports and soft currency licences upto 100 per cent. of half of best year's imports to established importers. These quota licences will not be valid for the import of Rapid Fast Colours (other than Rapidogen type) and Solubilized Vat Dyes of Green IB and Blue 04B types and Fast Colour Salts (Developing Salts). Not more than one per cent. of the face value of the quota licences for soft currency area may be utilised for the import of pigment colours in emulsion form used in textile printing. Further, not more than 4 per cent. of the face value of the licence can be utilised for the imports of (a) Rapidogens and Spectrolenes; (b) Acid dyes, namely, acid orange, acid fast red, acid black, acid scarlet; (c) Direct dyes, namely, blue, brown (including khaki), red, green, black, garnet, violet; and (d) Sulphur Black. Not more than one fourth of this 4 per cent. of the face value can be used for import of Sulphur Black and not more than one third for the import of Direct Red. The following dyes may be imported outside the face value restriction, namely (1) Nigrosine; (2) Acid Dyes—(a) Eosine, (b) Dyes containing metallic complexes; (3) Direct Dyes—(a) Dyes based on phthalocyanin and (b) sulphur dyes based on Naphthalene. The details regarding the import control policy during the years 1951 to 1954 are given in Appendix V.

(b) Imports of various types of dyes are recorded separately in the Accounts relating to the Foreign Trade and Navigation of India. Figures relating to imports from 1946-47 to 1952-53 with breakdown according to different types as well as according to different sources are given in Appendix IV. In the period immediately following the last war, U.S.A. was an important source of supply of dyes, but since then large quantities of dyes have been imported from U.K. During the last four years the dyestuff industry in West Germany has shown marked recovery and imports from that country have been increasing steadily.

Existing rates of imports duties

11. Import duties leviable on dyes and specific intermediates required for the dyes being manufactured at present are shown under items Nos. 28, 30(1) and 30(13) of the Indian Customs Tariff. The relevant extract from the first schedule of the Indian Customs Tariff (38th Issue), is given below. The tariff values of various articles have been revised since the publication of the 38th Issue and have been accordingly amended in the extract on page Nos. 26—27.

C.i.f. prices of imported dyes

12. (a) We found that it was not possible in the case of dyes to follow our usual procedure for obtaining c.i.f. prices and landed costs for the purpose of comparison with the fair ex-works prices of corresponding indigenous products. Absence of standard nomenclature for dyes and lack of recognised standards of strength of dyes made the task of selecting comparable c.i.f. prices difficult and complicated. Dyes are generally imported in concentrated forms and are subsequently processed to obtain varying strengths and shades. The strength of the product which is sold in the market, therefore,

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rates of duty
				The United Kingdom	A British Colony	Burma	
1	2	3	4	5	6	7	8
28	Chemicals, Drugs and Medicines, all sorts not otherwise specified.	Preferential revenue	Rate of duty actually charged at the time for such products of the United Kingdom or British Colonial origin plus 10 per cent *ad valorem* plus 5 per cent of the total duty	26 per cent *ad valorem* plus 5 per cent of the total duty	26 perecent *ad valorem* plus 5 per cent of the total duty	10½ per cent *ad valorem*	
30(1)	Dyes derived from coal tar, and coal tar derivatives, used in any dyeing process, all sorts, other than Alizarine moist exceeding 20 per cent., Alizarine red, Azo dyes, Sulphur black, Sulphur dyes of other colours, Ultrazols and vats, powder.*	*Revenue	12 per cent *ad valorem*	..	..	Free	..
	Tariff Values	Rs. as ps. per cwt.					
	Alizarine, moist—						
	Over 16 per cent not exceeding 40 per cent	160 0 0					
	Alizarine dry—	Per lb.					
	(v) not exceeding 40 per cent .	4 0 0					
	(b) exceeding 40 per cent . .	6 8 0					
	Congo red	3 4 0					
	upling dyes of the Naphthol group—						
	(a) Naphthols	11 4 0					
	(b) Rapid fast colours (rapid salts)	16 0 0					
	(c) Bases	11 0 0					
	(d) Other salts	6 0 0					

	Vats—		Rs. as. ps. per lb.				
	(*a*) Indigo, (*i.e.*, pure indigo in its various concentrations)		4 12 0				
	(*b*) Indigo solubilised including Indigosols O and Soledon Indigo LLS.		12 8 0				
	(*c*) Carbazole blue . . .		10 12 0				
	(*d*) Solubilised and stable vat dyes such as Indigosols, Soledons and similar products excluding those falling under group (*b*) above.		52 0 0				
	(*e*) Other sorts—						
	Paste		11 4 0				
	Metanil Yellow . .		3 6 0				
	Aniline Oil . . .		0 15 6				
	Aniline salts . . .		1 0 0				
	All others		7 8 0				
30(13)	Dyes, derived from coal-tar the following, namely*:—						
	Alizarine moist exceeding 20 per cent.	Revenue	12 per cent *ad valorem*	..	..	Free	..
	Alizarine red	Do.	Do.	..	..	Do.	..
	Azo dyes	Do.	Do.	..	..	Do.	..
	Sulphur black	Do.	Do.	..	..	Do.	..
	Sulphur dyes of other colours .	Do.	Do.	..	..	Do.	..
	Ultrazols	Do.	Do.	..	..	Do.	..
	Vats, powder	Do.	Do.	..	..	Do.	..
	Tariff values	Rs. as. ps. per cwt.					
	Alizarine, moist exceeding 20 per cent.	250 0 0 per lb.					
	Vats powder	47 8 0					
	Sulphur black	2 12 0					
	Azo dyes	7 8 0					
	Ultrazols	11 4 0					

---

*These are GATT items.

is not the same as that of the product which is imported. It is also common experience that the same product when imported from different sources varies in strength and frequently there are variations in the strength of the product imported even from the same source. Since the strength of some of the dyes produced in the country differs greatly from that of the imported dyes, we found it necessary to adjust the c.i.f. prices on the basis of the relative strengths. We, therefore, obtained from the importers information regarding the strength of the imported dye as compared to that of the dye produced in the country. In certain cases we found that it was necessary to give to the importers samples of indigenous dyes so that they might specify the relative strengths.

(b) We have generally adopted the lowest price of the latest consignment from important sources for each dye. We obtained quotations of the c.i.f. prices and landed costs of dyes and information regarding the relative strengths of various dyes from the principal importing firms. After discussing these quotations with the representatives of importers at the public inquiry we have adopted the following c.i.f. prices of imported dyes for the purpose of comparison with the fair ex-works prices of the corresponding indigenous dyes:—

Name of dye	*Country of origin*	*C.i.f. Price adopted*
		Rs. per lb.
Acid Black 10BX	U.K.	3.125
Crocein Scarlet MOO	Germany	3.769
Acid Fast Red A	U.K.	2.508
Acid Orange II	Germany	1.563
Developed Black BT	Germany	3.563
Direct Black E	Germany	2.613
Direct Blue 2B	Germany	4.509
Direct Brown M	U. K.	5.118
Congo Red	U.S.S.R.	1.375
Direct Green B	Germany	2.613
Direct Garnet BY	Germany	3.994
Direct Red 12B	U. K.	7.000
Direct Violet N	U. K.	3.750
Direct Fast Scarlet 4BS	Switzerland	6.469
Direct Sky Blue FF	U. K.	7.000
Sulphur Black	Japan	0.875
Rapidogen Red R	U. K.	8.000
Rapidogen Violet B	Switzerland	15.661
Rapidogen Blue B	Switzerland	16.052
Rapidogen Bordeaux RB	U. K.	9.886
Rapidogen Brown IBR	Germany	17.052
Rapidogen Orange R	Switzerland	11.182
Rapidogen Scarlet RS	U. K.	10.583
Rapid Fast Red RH	Germany	10.687
Rapid Fast Blue B	Germany	10.312
Rapid Fast Yellow GGH	Germany	9.937
Rapid Fast Bordeaux R	Germany	11.875
Rapid Fast Orange RGH	Germany	9.375
Rapid Fast Scarlet R	Germany	14.000
Rapid Fast Brown IB	Germany	22.000
Blue B Salt	U. K.	2.583
Blue BB Salt	U. K.	12.110
Violet B Salt	U. K.	6.812

Name of dye	*Country of origin*	*C. i. f.* Price *adopted*
		Rs. per lb.
Bordeaux GP Salt	Switzerland	2.958
Scarlet GG Salt	U.K.	2.081
Orange GC Salt	U.K.	2.225
Yellow GC Salt	Germany	2.562
Scarlet R Salt	Germany	2.812
Red TR Salt	U. K.	2.808
Orange GR Salt	Germany	2.562
Solubilized Vat Green IB	Germany	37.250
Solubilized Vat Blue 04B	Germany	14.375

Estimates of fair ex-works prices of dyes

13. (a) We selected three units of the industry for the purpose of cost investigation, *viz.*, Atul Products, Ltd., Bulsar, Associated Research Laboratories, Bhatghar (Poona) and National Chemical Industries, Delhi. Our Cost Accounts Officer examined the cost of production of these units and submitted his Reports to us. As these units desire that the details of their costs should be kept confidential, we are forwarding the cost reports separately as confidential enclosures.*

(b) National Chemical Industries, Delhi, were producing only Rapid Fast Colours at the time of cost investigation and as their production was comparatively small, we do not think that their cost of production can be taken to be representative. We have, therefore, decided to estimate the fair ex-works prices of Acid and Direct Dyes and Sulphur Black manufactured by Atul Products, Ltd. and of Rapid Fast Colours, Salts and Solubilized Vats manufactured by Associated Research Laboratories.

(c) *Estimate of fair ex-works prices of dyes produced by Atul Products Ltd.*—The cost data of Atul Products, Ltd. were examined for the period from 1st January 1953 to 30th June, 1953 when the manufacture of dyes was undertaken on a commercial scale. The production of Azo Dyes during this period was 261,000 lbs. *i.e.*, about 26 per cent. of the installed capacity and that of Sulphur Black 204,000 lbs. *i.e.*, about 40 per cent. of the installed capacity. After discussion with the representatives of the Company, we have estimated fair ex-works prices of the various dyes manufactured by Atul Products Ltd. for the future on the following basis:—

(1) *Production.*—We have assumed a production of 1,811,045 lbs. of Acid and Direct Dyes which is about 90 per cent. of the capacity for these dyes and of 1,000,000 lbs. of Sulphur Black which comes to about 100 per cent. of the existing capacity of the Sulphur Black department.

---

* Not printed.

(2) *Raw materials.*—In the initial stages of manufacture, the Company obtained most of the specific intermediates from American sources but at the time of cost investigation they were importing their major requirements from German sources. The quantities of intermediates required per pound of dye have, therefore, been calculated in working out the future estimates after taking into consideration the strength of the various intermediates of German origin as compared with that of the corresponding intermediates of U.S. origin. The latest c.i.f. prices actually paid by the Company have been adopted.

(3) *Conversion charges.*—We have assumed that there will be a reduction of more than 50 per cent. over the actuals in operating charges per pound of dye in the future owing to the following factors (i) production is estimated at about 3½ times the actual production during the period of cost investigation; (ii) a higher yield per batch is expected in the future; and (iii) a major proportion of the total expenditure under different items of costs is assumed to be fixed in relation to the volume of production.

(4) *Packing cost.*—The packing cost has been determined at a flat rate per pound depending upon the contents of each dye in the standard bulk packing.

(5) *Interest on working capital.*—Working capital has been taken to be equal to five months' cost of production and interest at the rate of 4½ per cent. per annum has been allowed on it.

(6) *Return on block.*—This has been allowed at 10 per cent. on the original value of Rs. 77·5 lakhs and Rs. 22·5 lakhs allocated to Azo and Sulphur Black departments, respectively. The return has been allocated for the individual dyes, as a percentage of the cost of production which works out to 9·2 per cent. for Azo Dyes and 13·2 per cent. for Sulphur Black.

(7) *Royalty.*—The Company has entered into an agreement with the American Cyanamid Company, New York, for payment of royalty at 2½ per cent. of the net sales value minus Indian taxation. This has been taken into account in estimating the fair ex-works prices for the future. The royalty works out to 2·564 per cent. of the estimated ex-works price but more than 20 per cent. of the conversion charges including depreciation.

Statement I gives the cost of material, conversion charges, factory cost, interest on working capital, return on block, royalty and the fair ex-works prices for the future of the various dyes manufactured by Atul Products Ltd. It will be seen from the statement that the total cost of materials varies from 75 to 94 per cent. of the total factory cost. The cost of imported materials without duty varies from 24 to 61 per cent., the duty on imported materials from 9 to 23 per cent. and the cost of indigenous materials from 5 to 46 per cent. Atul Products Ltd. have to import some of their specific intermediates at prices which are very high in relation to those of the corresponding imported dyes with which they have to compete. The cost of imported materials without duty required for Congo Red, for instance, is Rs. 1·598 per lb. of the dye, while the finished dye can be imported at a c.i.f. price of Rs. 1·375 per lb. The materials have to be imported from Germany while the competition in the finished dye comes mainly from U.S.S.R. The c.i.f. price of

Acid Fast Red A imported from U.K. is less than one-half of the cost (without duty) of imported materials required for this dye which are imported from Germany. Similarly in the case of Sky Blue FF, while the c.i.f. price of the dye imported from U.K. is Rs. 7 per lb., the cost of materials without duty imported from Germany is Rs. 6·032 per lb. of the dye. A similar position obtains in the case of Direct Red 12B. The dyes mentioned above account for about 6·9 lakh lbs. out of Atul Products' total projected production of 28 lakh lbs.

(d) *Estimates of fair ex-works prices of dyes produced by Associated Research Laboratories.*—The cost data of Associated Research Laboratories, Bhatgar were examined for the period from 1st January to 30th September, 1953. The estimated capacity of the factory is 8·72 lakh lbs. for Rapid Fast Dyes, Rapidogen Dyes and Fast Colour Salts, and 1·5 lakh lbs. for Solubilized Vats. During the period January—September 1953, production of Rapid Fast Dyes and Fast Colour Salts was 106,575 lbs. *i.e.*, only about 16·3 per cent. of the capacity and of Vats 38,594 lbs. *i.e.*, about 34·3 per cent. of the capacity. After discussion with the representatives of Associated Research Laboratories, we have estimated the fair ex-works prices for the future of the various dyes manufactured by them on the following basis:—

(1) *Production.*—The following production has been assumed per annum: Rapid Fast Dyes (almost the entire range), 59,900 lbs.; Rapidogen dyes (almost the entire range), 119,900 lbs.; Fast Colour Salts (almost the entire range), 250,500 lbs.; and Solubilized Vats (Green IB and Blue 04B), 144,000 lbs.

(2) *Raw materials.*—The consumption of raw materials has been assumed to be the same as during the period of cost investigation. Prices for such materials have been adopted on the basis of the latest purchase prices of the firm or contracted rates.

(3) *Conversion charges.*—The conversion charges per lb. for the future have been estimated at about 50 per cent. of the actual conversion charges on account of the higher level of output assumed.

(4) *Packing cost.*—This has been calculated at a rate per pound depending upon the nature of the packing adopted by the firm.

(5) *Interest on working capital.*—The working capital has been taken to be equal to five months' cost of production and interest at 4½ per cent. per annum has been allowed on it.

(6) *Return on block.*—The original value of the fixed assets of the firm for Rapid Fast Dyes, Rapidogen dyes and Solubilized Vats amounted to about Rs. 8·08 lakhs. A return at 10 per cent. of this value would work out to 1·3 per cent. on the cost of production. As this return would be inadequate, we have adopted a rate of 5 per cent. on the factory cost of production.

(7) *Production bonus.*—Associated Research Laboratories have been paying a production bonus calcuated at a percentage on the cost of production. As this has been treated as an item of cost, provision has been made for it in arriving at the fair ex-works prices.

Statement II shows the estimated fair ex-works price per pound of different types of dyes manufactured by Associated Research Laboratories, for the future.

STATE

Estimated cost of production and fair ex-works price per lb. of the Dyes Produc-

Type of Dye	Acid Black 10BX	Crocein Scarlet Moo	Acid Orange II	Acid Fast Red A	Develop-ed Black BT	Direct Black E
Assumed production lbs.	20,820	149,960	125,970	20,400	124,620	249,570
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs
i. Imported material without duty	1·986	2·526	0·539	5·499	2·287	1·957
ii. Duty on imported material	0·743	0·944	0·196	1·611	0·862	0·735
iii. Other material	0·646	0·389	1·036	1·078	0·444	0·594
Total material cost	3·375	3·859	1·771	8·188	3·593	3·286
Conversion charges	0·462	0·703	0·363	1·146	0·428	0·813
Packing	0·070	0·093	0·112	0·070	0·070	0·070
Cost of production	3·907	4·655	2·246	9·404	4·091	4·169
Interest on W/C at 1·75% on C.P.	0·068	0·081	0·039	0·165	0·072	0·073
Return on Block at 9·2 per cent. for Azo and 13·2 % for S. B. on Cost	0·359	0·428	0·207	0·865	0·376	0·384
Ex-works price	4·334	5·164	2·492	10·434	4·539	4·626
Royalty at 2·564 % on ex-works price	0·111	0·132	0·064	0·268	0·116	0·119
Fair Ex-works price	4·445	5·296	2·556	10·702	4·655	4·745

सत्यमेव जयते

MENT I

ed by Atul Products Ltd.

Direct Blue 2B	Direct Brown MR	Direct Garnet BY	Direct Green B	Direct Red 12B	Direct Violet N	Direct Fast Scarlet 4BS	Direct Sky Blue FF	Congo Red	Bismark Brown	Sulphur Black GXE	Sulphur Black GXER
60,200	60,300	100,000	150,525	65,250	40,250	40,300	100,430	1500,400	2,050	500,000	500,009
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2·090	2·473	1·792	1·634	6·286	2·121	4·592	6·032	1·598	3·972	0·494	0·494
0·785	0·934	0·677	0·613	2·380	0·800	1·740	2·288	0·606	1·489	0·187	0·187
0·321	1·225	0·192	0·595	0·774	0·334	0·454	3·107	0·774	0·735	0·549	0·724
3·196	4·632	2·661	2·842	9·440	3·255	6·786	11·427	2·978	6·196	1·230	1·405
0·491	0·428	0·802	1·358	0·764	0·698	2·116	0·690	0·255	3·354	0·321	0·321
0·070	0·070	0·070	0·070	0·070	0·070	0·070	0·070	0·093	0·070	0·070	0·070
3·757	5·130	3·533	4·270	10·274	4·023	8·972	12·187	3·326	9·620	1·621	1·796
0·066	0·090	0·062	0·075	0·180	0·070	0·157	0·214	0·058	0·168	0·028	0·031
0·346	0·472	0·325	0·393	0·945	0·370	0·825	1·121	0·306	0·885	0·214	0·237
4·169	5·692	3·920	4·738	11·399	4·463	9·954	13·522	3·690	10·673	1·863	2·064
0·107	0·146	0·101	0·121	0·292	0·114	0·255	0·347	0·095	0·274	0·048	0·053
4·276	5·838	4·021	4·859	11·691	4·577	10·209	13·860	3·785	10·947	1·911	2·117

STATEMENT II

Estimated cost of production and fair ex-works price per lb. of Dyes and Salts Produced by Associated Research Laboratories.

Sl. No.	Type of Dyes or Salts	Assumed production	Details of fair ex-works price						
			Material cost without duty on bases Naphthols, etc.	Duty on bases Naphthols, etc.	Conversion charges	Packing	Interest on Working Capital	Return on block	Fair ex-works price (4 to 9)
1	2	3	4	5	6	7	8	9	10
		Lbs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
	A. Rapid Fast Dyes								
1	Red RH	28,400	4·265	0·696	0·972	0·089	0·105	0·291	6·418
2	Blue B	14,200	3·365	0·530	0·936	0·089	0·086	0·238	5·244
3	Lemon yellow 3G . .	1,800	3·596	0·432	0·940	0·089	0·088	0·244	5·389
4	Yellow GGH . . .	1,400	2·951	0·353	0·915	0·089	0·075	0·208	4·591
5	Golden yellow RB . .	9,750	3·835	0·431	0·948	0·089	0·092	0·256	5·651
6	Bordeaux RB . . .	1,250	4·485	0·630	0·978	0·089	0·108	0·299	6·589
7	Orange RGH . . .	2,400	4·209	0·647	0·969	0·089	0·103	0·286	6·303
8	Scarlet R	300	3·588	0·545	0·944	0·089	0·090	0·250	5·506
9	Brown IB	400	15·306	0·727	1·355	0·089	0·304	0·845	18·626
	B. Rapidogen Dyes								
1	Red R	27,050	4·730	1·037	1·073	0·089	0·121	0·335	7·385
2	Blue BB	23,800	10·962	1·300	1·297	0·089	0·237	0·660	14·545

3	Violet B	39,700	9·514	1·143	1·242	0·089	0·209	0·579	12·776
4	Blue R	4,100	4·613	1·232	1·075	0·089	0·122	0·339	7·470
5	Brown IB	7,500	15·378	0·965	1·439	0·089	0·311	0·864	19·046
6	Brown IBR. . . .	700	16·016	1·055	1·464	0·089	0·324	0·900	19·848
7	Bordeaux R.B. . . .	6,600	5·752	0·732	1·098	0·089	0·133	0·371	8·175
8	Green B	650	15·508	1·157	1·450	0·089	0·317	0·880	19·401
9	Orange R . . .	6,400	7·347	1·530	1·180	0·089	0·177	0·490	10·813
10	Scarlet R	8,400	6·763	1·348	1·154	0·089	0·163	0·452	9·969
	C. Fast Colour Salts								
1	Blue B	4,500	2·317	0·259	0·472	0·089	0·055	0·152	3·344
2	Blue BB	23,100	8·368	0·488	0·689	0·089	0·168	0·466	10·268
3	Violet B	32,250	5·323	0·246	0·575	0·089	0·108	0·301	6·642
4	Bordeaux GP . . .	104,800	2·041	0·279	0·464	0·089	0·050	0·139	3·062
5	Scarlet GG . . .	60,000	1·526	0·359	0·448	0·089	0·042	0·117	2·581
6	Orange GG . . .	2,650	1·479	0·249	0·443	0·089	0·039	0·019	2·408
	Yellow GC . . .	2,100	1·516	0·396	0·449	0·089	0·046	0·118	2·614
	Scarlet R	12,500	2·161	0·321	0·469	0·089	0·053	0·147	3·240
9	Red TR	6,800	3·280	0·434	0·511	0·089	0·075	0.209	4·598
10	Orange GR . . .	1,800	1·994	0·399	0·466	0·089	0·051	0·142	3·141
	D. Solubilised Vats								
1	Green 1B	96,000	23·214	2·241	2·735	0·089	0·492	1·367	30·138
2	Blue 04B	48,000	14·359	4·411	2·230	0·089	0·367	1·019	22·475

Comparison of c.i.f. prices and landed costs of imported dyes with estimated fair ex-works prices of indigenous dyes

14. (a) A comparison of the landed costs without duty of imported dyes corresponding to those produced by Atul Products, Ltd. and Associated Research Laboratories with the fair ex-works prices of indigenous dyes with and without customs duty on specific intermediates (in the case of Atul Products Ltd. only) is made in Statements III and IV. It will be seen from these statements that the duty required for equating fair ex-works prices of dyes produced by Atul Products, Ltd. and Associated Research Laboratories with landed costs of corresponding imported dyes without any remission of duty on specific intermediates would be as follows:—

	Per cent
Acid Dyes	48.5 (Exclusive of Acid Fast Red A)
Direct Dyes	54·4
Congo Red	168.5
Sulphur Black	123·1
Rapid Fast Dyes and Rapidogens . .	Nil.
Fast Colour Salts	8.2
Solubilised Vats	5·9

If, however, customs duty on specific intermediates used by Atul Products, Ltd. is remitted only to the extent of 27·8 per cent. *ad valorem* for reasons which are explained below in paragraph 15(g) the duty required would be as follows:—

	Per cent
Acid Dyes	34·0 (Exclusive of Acid Fast Red A)
Direct Dyes	35·9
Congo Red	135·9
Sulphur Black	107·3

सत्यमेव जयते

STATEMENT III

Comparison of estimated fair ex-works prices of dyes produced by Atul Products Ltd. with C.I.F. prices and landed costs of imported dyes

Serial No.	Name of Dye	Assumed production in lbs.	Fair ex-works price as per statement	Customs duty on Imported specific organic intermediates included in fair ex-works price	Fair ex-works price without customs duty on specific organic intermediates	Equated latest and lowest c.i.f. price	Clearing and other charges	Landed cost excluding duty	Difference between fair works price excluding duty and landed cost without duty	Duty indicated with 27·8% remission of customs duty on intermediates	Duty indicated without remission of customs duty on intermediates
1	2	3	4	5	6(4—5)	7	8	9(7+8)	10(6—9)	11	12
		Lbs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	%	%
	A.—*Acid Dyes* :										
1	Acid Black 10 BX	20,820	4·445	0·743	3·702	3·125	0·094	3·219	+0·483	21·7	39·3
2	Crocein Scarlet MOO	149,960	5·296	0·944	4·352	3·769	0·094	3·863	+0·489	19·6	38·0
3	Acid Orange II	125,970	2·556	0·196	2·360	1·563	0·016	1·579	+0·781	53·3	62·5
4	Acid Fast Red A	20,400	10·702	1·611	9·091	2·508	0·016	2·524	+6·567	278·7	326·0
	TOTAL	317,150								34·0*	48·5*

---

*For weighting the average duty for the group, Acid Fast Red A, being a dye of uneconomical cost, has been excluded.

STATEMENT III—*contd.*

1	2	3	4	5	6	7	8	9	10	11	12
		Lbs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	%	%
	B.—*Direct Dyes* :										
1.	Developed Black BT .	124,620	4·655	0·862	3·793	3·563	0·031	3·594	+0·199	12·0	29·8
2.	Direct Black E . .	249,570	4·745	0·735	4·010	2·613	0·031	2.644	+1·366	59·7	80·4
3.	Direct Blue 2B . .	60,200	4·276	0·785	3·491	4·509	0·031	4·540	—1·049	—18·7	—5·9
4.	Direct Brown M . .	60,300	5·838	0·934	4·904	5·118	0·016	5·134	—0·230	0·3	13·7
5.	Direct Garnet BY .	100,000	4·021	0·677	3·344	3·994	0·094	4·088	—0·744	—14·2	—1·7
6.	Direct Green B . .	150,525	4·859	0·613	4·246	2·613	0·031	2·644	+1·602	67·5	84·8
7.	Direct Red 12B . .	65,250	11·691	2·380	9·311	7·000	0·031	7·031	+2·280	41·5	66·6
8.	Direct Violet N . .	40,250	4·577	0·800	3·777	3·750	0·094	3·844	—0·067	3·8	19·5
9.	Direct Fast Scarlet 4BS	40,300	10·209	1·740	8·469	6·469	0·094	6·563	+1·906	36·0	56·4
10.	Direct Sky Blue FF .	100,430	13·869	2·288	11·581	7·000	0·094	7·094	+4·487	72·7	96·8
	TOTAL . . .	991,445	..	..	..	..	..	..	..	35·9	54·4
11.	Congo Red . . .	500,400	3·785	0·606	3·179	1·375	0·094	1·469	+1·710	135·9	168·5
	C,—*Sulphur Black* : GXE/GXR† . .	1,000,000	2·014	0·187	1·827	0·875	0·062	0·937	+0·890	107·3	123·1

†Sulphur Black GXE and GXR taken at the average cost.

STATEMENT IV

Comparison of estimated fair ex-works prices of dyes produced by Associated Research Laboratories with c.i.f. *prices and landed costs of imported dyes.*

Serial No.	Name of Dyes/Salts	Assumed production	Fair ex-works price estimated	Latest and Lowest c.i.f. prices	Clearing charges	Landed cost excluding duty	Difference between FEWP and L.C. W/O Duty	Difference as a % on c.i.f.
1	2	3	4	5	6	7 (5+6)	8 (4—7)	9
		Lbs.	Rs.	Rs.	Rs.	Rs.	Rs.	%
	A.—*Rapid Fast Dyes* :							
1.	Rapid Fast Red RH	28,400	6·418	10·687	0·031	10·718	—4·300	—40·24
2.	Rapid Fast Blue B	14,200	5·244	10·312	0·031	10·343	—5·099	—49·45
3.	Rapid Fast Yellow GGH	1,400	4·591	9·937	0·031	9·968	—5·377	—54·11
4.	Rapid Fast Bordeaux R	1,250	6·589	11·875	0·031	11·906	—5·317	—44·77
5.	Rapid Fast Orange RGH	2,400	6·303	9·375	0·031	9·406	—3·103	—33·10
6.	Rapid Fast Scarlet R	300	5·506	14·000	0·031	14·031	—8·525	—60·89
7.	Rapid Fast Brown IB	400	18·626	22·000	0·031	22·031	—3·405	—15·48
	TOTAL	48,350	..	..	..	..	..	—43·03

STATEMENT IV—*contd.*

1	2	3	4	5	6	7 (5+6)	8 (4—7)	9
		Lbs.	Rs.	Rs.	Rs.	Rs.	Rs.	%
	B.—*Rapidogen Dyes* :							
1.	Rapidogen Red R	27,050	7·385	8·000	0·016	8·016	—0·631	—7·89
2.	Rapidogen Blue B	23,800	14·545	16·052	0·016	16·068	—1·523	—9·49
3.	Rapidogen Brown IBR	700	19·848	17·052	0·094	17·146	+2·702	+15·85
4.	Rapidogen Bordeaux RB	6,600	8·175	9·886	0·016	9·902	—1·727	—17·47
5.	Rapidogen Orange R	6,400	10·813	11·182	0·016	11·198	—0·385	—3·44
6.	Rapidogen Scarlet R	8,400	9·969	10·583	0·016	10·599	—0·630	—5·95
	TOTAL	72,950	..	..	..	..	..	—8·44
	C.—*Fast Colour Salts* :							
1.	Fast Salt Blue B	4,500	3·344	2·583	0·016	2·599	+0·745	+28·84
2.	Fast Salt Blue BB	23,100	10·268	12·110	0·016	12·126	—1·858	—15·34
3.	Fast Salt Violet B	32,250	6·642	6·812	0·016	6·828	—0·186	—2·73
4.	Fast Salt Bordeaux GP	104,800	3·062	2·958	0·016	2·974	+0·088	+2·97
5.	Fast Salt Scarlet GG	60,000	2·581	2·081	0·016	2·097	+0·484	+23·26
6.	Fast Salt Orange GC	2,650	2·408	2·225	0·016	2·241	+0·167	+7·51
7.	Fast Salt Yellow GC	2,100	2·614	2·562	0·031	2·593	+0·021	+0·82
8.	Fast Salt Scarlet R	12,500	3·240	2·812	0·031	2·843	+0·397	+14·12
9.	Fast Salt Red TR	6,800	4·598	2·808	0·016	2·824	+1·774	+63·18
10.	Fast Salt Orange GR	1,800	3·141	2·562	0·031	2·593	+0·548	+21·89
	TOTAL	250,500	..	..	..	..	..	+8·23
	D.—*Solubilised Vats* :							
1.	Green IB	96,000	30·138	37·250	0·031	37·281	—7·143	—19·18
2.	Blue 04B	48,000	22·475	14·375	0·031	14·406	+8·069	+56·13
	TOTAL	144,000	..	..	..	..	..	+5·92

(b) The rates of duties indicated in the preceding paragraph have been worked out with reference to the c.i.f. prices of imported dyes of strengths comparable to those of the corresponding indigenous dyes. The tariff values fixed for imported dyes, on the basis of which the amount of duty payable is assessed, are, however, substantially higher than the c.i.f. prices. Consequently, when the above rates of duties are applied to existing tariff values, the amounts of duties payable would work out higher than those shown to be necessary, in the statements given in paragraph 14(a) to equate the fair ex-works prices of indigenous dyes with the landed costs, ex-duty, of imported dyes of comparable strengths. Two relevant factors to be noted in this connection are (1) the tariff values are based on much higher strengths than those to which the c.i.f. prices and landed costs, ex-duty, adopted by us relate, and (2) the system of tariff values, which results in the same amount of duty being charged per lb. of dye, even when different consignments of the same dye are imported in varying strengths and consequently at varying c.i.f. prices, makes it economical for importers to import dyes in as high a strength as possible. It may be necessary to continue the system for administrative convenience. In view of these two factors, it would be correct to work out the rates of protective duties on the basis of the c.i.f. prices of imported dyes of strengths comparable to those of the corresponding indigenous dyes, and apply the rates to tariff values, provided (a) the tariff values are fixed on the basis of the highest strengths in which the dyes are imported and (b) they approximate to the actual c.i.f. prices for such strengths over a period. The first condition is important, because if dyes are imported in strengths higher than those on the basis of which the tariff values are fixed, the effective duties on such dyes for strengths comparable to those in which indigenous dyes are sold will be lower than the rates required to afford adequate protection to the domestic industry. As regards the second condition, the tariff values may be fixed either on the basis of the invoice values or on the basis of the wholesale market prices (less trade discount and duty). In so far as the latter procedure is followed, the tariff values may not reflect the actual c.i.f. prices over a period and any divergence between the two will have to be taken into account in fixing the rates of protective duties. In order to enable an effective scheme of tariff protection to be devised, therefore, it is necessary, firstly, to ensure that the tariff values are fixed on the basis of the highest strengths in which the dyes are imported and secondly, to record the strengths adopted for the purpose of fixing the tariff values and to study how far the tariff values approximate to the average c.i.f. prices for such strengths over a period.

Measure of protection

15. (a) India has entered the field of manufacture of dyes, when the dyestuff industry is already firmly established in countries like U.S.A., U.K., Germany and Switzerland for several decades. As the Indian industry has started late it will have to face many difficulties and its disadvantage as compared with the foreign industry is bound to be considerable especially in the early stage of development. The industry in foreign countries is not only backed by large investments, but has at its disposal highly trained and experienced technical personnel as well as vast resources of well-organised research.

Besides, it has not only built up extremely efficient sales organisations on a national scale but has also entered into international cartellised arrangements for strengthening its position. Having regard to these and other advantages enjoyed by the foreign industry we are convinced that the dyestuff industry in India will not be able to survive unless adequate protection and assistance are given to it by Government.

There is no doubt that it is in the national interest that the dyestuff industry should be established in this country. This industry forms the nucleus around which the organic chemical industry can develop. Its progress is linked up with the development of other essential chemical industries such as the heavy inorganic chemical industry and coal tar industry on the one hand, and the fine chemical and pharmaceutical industry, explosives, synthetic plastics and solvent industries, on the other. The products of this industry thus contribute to the strength of national economy in times of peace and the industry can be readily converted to the production of defence materials in times of crisis. We have indicated in paragraph 6 above that substantial progress has already been made towards the establishment of the industry in India and several programmes of expansion and development for the manufacture of dyes have recently been approved by Government. In view of the importance of the industry it is essential that the progress already made should be consolidated and conditions favourable for further expansion on sound lines should be created. The industry is at present in the initial stage of manufacturing dyes from complex intermediates but unless protection and assistance are given to it at this stage it might not be possible for it to make this stage of manufacture commercially successful and take up the next stage of manufacture.

(b) (i) We consider that the industry can develop on sound lines only on the basis of a carefully thoughtout and phased programme of manufacture of dyes, intermediates and basic raw materials. The Dyestuffs Exploratory Committee was of the opinion that 15 to 20 years would be required for establishing a full-fledged dyestuff industry in India. It is difficult to lay down any exact period for the attainment of self-sufficiency but with necessary support and encouragement from Government it should be possible for the dyestuff industry in India to develop fully within 15 to 20 years. It is obvious that when, the period of development is so long the progress will have to be watched carefully and necessary steps taken to ensure implementation of the programme of manufacture of dyes as well as intermediates. At each stage of the development of the industry the manufacture of dyes and production of intermediates will have to be carefully co-ordinated. The finished dyes to be produced will have to be carefully selected with due regard to the difficulties arising from the dependence on imported intermediates, the possibilities of manufacturing the intermediates within the country, the availability of technique and materials, the probable cost of production and also the need for developing a sufficiently large volume of demand for the intermediates which it is proposed to manufacture in the next stage. In the earlier stages, manufacturers may be inclined to frame their production programmes exclusively on the pattern of domestic demand for finished dyes. It will not be desirable to take such programmes for granted and to formulate a plan for manufacture of intermediates on that basis. There may be need, on the one hand, for discontinuing the production of some dyes, the intermediates for which are not available at economic prices or cannot be produced for some years to come and on the other, for extending the range of finished dyes in order that a sufficient demand may be created for the intermediates proposed to be manufactured in the next stage. Similarly the programme for manufacture of intermediates will have to be developed around the nucleus of certain selected items which are likely to be required in large quantities. Other items for which the demand may be small may be included in the programme if they can be easily derived from the main items or can be produced by the same basic processes, for example, chlorination, nitration and reduction which are required to be established for the main items. Priority should be given to those intermediates which are used exclusively for the manufacture of dyes over those which could be used both as finished dyes and as intermediates. It may be pointed out that the risk of exploitation by foreign suppliers is greater in the case of the former category of intermediates. The intermediates used by Atul Products Ltd., belong to the first category, and those used by the manufacturers of Rapid Fast dyes to the second.

(ii) It is essential that the industry should not confine itself merely to the final stages of processing imported complex intermediates but should plan and progressively develop the production of dyes from primary intermediates and basic raw materials. In the early stages of the development of the industry it is inevitable that the dyes would be manufactured from complex intermediates but for establishing the industry on a secure and stable basis it is essential that the scope of manufacturing activity should be extended backwards so as to cover eventually the stage of primary intermediates and basic raw material. It will, however, be desirable to enlarge the scope of manufacture by stages. For, in the first place, the technique of manufacture of dyes from complex intermediates is simpler than that of manufacturing the complex intermediates and can, therefore, be established more easily and in a shorter time. Secondly, it would be economical to take up the production of complex intermediates only when the domestic demand for them is sufficiently large and this stage will be reached only when the production of dyes in which the complex intermediates are used is established in the country. Thirdly, the manufacture of complex and primary intermediates as well as basic raw materials would require heavy capital investment at each stage and unless production at each stage is found to be commercially successful, sufficient financial resources might not be available to the industry to extend the scope of manufacture. At the same time it is necessary to ensure that the manufacture of intermediates is not postponed or delayed unduly. The dependence of the dyestuff industry for a long time on imported intermediates would defeat one of the main objects of establishing the industry *viz.*, to set up a nucleus around which other organic chemical industries should grow up.

(c) Progress of the dyestuff industry in India will be greatly assisted if production is concentrated in a few large units. The organisation and processes of production of the industry are such that the larger the scale of production, the lower will be the cost of production. Moreover, production of intermediates will require heavy capital investment which may be difficult to obtain if the available business were divided between too many units. For example, if two units are permitted to manufacture the same dye, the intermediates required for which can be produced economically only on a large scale, either both of them or only one of them may be permitted to manufacture the intermediates concerned. In the former case there may be unnecessary duplication of capacity resulting in higher cost, thereby neutralising the benefit expected from internal competition. In the latter case, there may be no effective internal competition, since the other unit may be dependent on the one which manufactures the intermediates. Another relevant consideration is that small units will not be able to incur heavy expenditure on research and development which will be necessary if the industry is not to depend permanently on collaboration with foreign manufacturers. Even where there is a gap between the domestic demand for a dye and the existing productive capacity, it would be advisable to plan for the expansion of the existing unit or units, instead of bringing new units into existence to fill up the gap, if the resulting duplication of capacity for the manufacture of the dye or of the intermediates required for it is likely to result eventually in an increase in cost.

(d) It is necessary that the programmes of production of the various units in the industry should be properly co-ordinated in the light of the above principles. Atul Products Ltd., have submitted to us a note on their plan for development which includes the manufacture of certain intermediates. Sufficient details have not, however, been furnished in this note on such points as the period required for implementing each phase of the programme, the scale of output, the prices and availability of raw materials, the extent of financial resources and technical assistance available, the probable cost of production of each item in relation to the current import cost and specific assistance if any, required from Government. We consider it essential that Atul Products Ltd., should draw up a revised programme on a long-term basis for the manufacture of dyes and intermediates incorporating therein detailed information on the lines indicated above. We also consider that similar programmes should be drawn up by other units for the manufacture of dyes and intermediates proposed to be manufactured by them. It is necessary that these programmes should be carefully scrutinised from technical and financial angles, particularly in the light of the principles set forth in sub-paragraphs (b) and (c) above, and a long-term plan evolved as early possible for the development of the dyestuff industry as a whole. Selection of dyes or intermediates to be produced in each phase of the plan and co-ordination of the production programmes of individual units, raise important technical and economic issues and it is necessary for the proper planning of the industry that these issues should be the subject of an expert investigation while the industry is still young and there is some scope for modification or adaptation of the production programmes of individual units. Even where the plans submitted by individual units for production of certain finished dyes have already been approved by Government, it may be that decisions have yet to be taken as to whether there is need for modification or extension of the range of finished dyes in order to provide an adequate basis for a programme for manufacture of intermediates and how the manufacture of intermediates themselves is to be organised. For example, Atul Products Ltd., have informed us that Azo Dyes, which at present account for 1·8 million lbs. out of their total projected production of 2·8 million lbs. "require the use of such a variegated number of intermediates that the individual quantities are rather small for economic manufacture". It is necessary to examine whether some modification or extension of their programme for finished dyes is called for in order to bring about better co-ordination between the production of finished dyes and that of intermediates. Some of the dyes produced by them are very uneconomical at present, *e.g.*, Acid Fast Red A, the cost of intermediates for which, without duty, is more than twice as high as the c.i.f. price of the finished dye, and it should therefore be considered whether the firm should continue production of such dyes. The cost of Dinitrocholorobenzene (D.N.C.B.) is a significant element in the cost of production of Sulphur Black which is the biggest single item in the programme of Atul Products Ltd., and which has been found to require a protective duty of 107 per cent. σ× all intermediaries, D.N.C.B. is likely to be required in the largest volume, about 640 tons for the production,of 2 million lbs. of Sulphur Black, and since the major equipment required for the production of D.N.C.B., which consists of Chlorination and Nitration units, is common for a variety of other intermediates of the Benzene group as well as for the toluidines and nitrotoluidines of the Toluene group, D.N.C.B. is likely to provide a substantial nucleus around which the production of several other intermediates can be developed. If, therefore, the production of D.N.C.B. could be developed on a sound basis, it would contribute materially to the economy of manufacture of several dyes derived from this and allied intermediates. The question whether the production of D.N.C.B. should be concentrated in one unit or divided between two units has to be studied from this wider angle, and not merely from the stand point of Sulphur Black alone. If the production of orthonitrochlorobenzene and para-nitrochlorobenzene could be established, either from imported or locally produced chlorobenzene (which is required for manufacture of D.N.C.B.), it may be possible to produce dianisidine (required for Direct Sky Blue FF) paraaminoacetanilide (required for Direct Scarlet 4 BS) and paranitraniline (required for Acid Black 10BX and Direct Green B) as well as several fast colour bases. Although the production of nitrobenzene, aniline and J Acid may have to be deferred to a later stage, the possibility of manufacturing benzidine (required for the following 8 dyes, namely Dev. Black BT, Direct Blue 2 B, Direct Brown MR, Direct Garnet BY, Direct Violet N, Direct Black E, Congo Red and Direct Green B) from imported nitrobenzene and sulphanilic acid (required for Acid Orange II), amino azo benzene (required for Crocein Scarlet) from imported aniline and Rhoduline acid and J acid urea (required for Direct Red 12B and Direct Scarlet 4BS respectively) from imported J Acid needs to be explored. The production of Congo Red, which is the biggest single item of Azo Dyes produced by Atul Products Ltd., and which needs a protective duty of 136 per cent. requires the use of sodium naphthionate. The possibility of manufacturing sodium naphthionate from alpha naphthylamine needs to be examined. We are advised that when sodium naphthionate is produced, Neville and Winther's acid (required for Direct Garnet BY) can be derived from it in a single stage. As stated above, the unit which will manufacture Chlorobenzene products can also produce, with substantially the same equipment, complex intermediates for certain fast colour bases and it needs to be considered how the production of these intermediates should be co-ordinated with that of fast colour bases for which two units have already been granted permission. Similarly, although both Atul Products Ltd., and Amritlal & Co., have been permitted to manufacture naphthols, on the understanding that in due course Atul Products Ltd. will make beta naphthol and beta hydroxy naphthoic acid (BON acid) and Amritlal & Co., also will make beta naphthol, there may be room for consideration whether it would be economical in the long run to divide the production of beta naphthol and BON acid between two units. There should also be some co-ordination between the production programmes of units like Associated Research Laboratories which produce rapid fast dyes, rapidogen dyes and fast colour salts, and those of units which have been licensed to produce naphthols and fast colour bases, the principal materials for those dyes. Similar problems may arise in the case of vat colours for which two units (for different ranges) have already been licensed. All these matters raise issues which are suitable for an expert investigation before a long term plan for the development of the dyestuff industry is finally adopted.

We, therefore, recommend that when detailed programmes of manufacture as suggested above are received from the various units, they should be referred to a Committee of Government experts for examination, in collaboration with the technical experts of the various units. The units may be asked to submit their programmes not later than 28th February 1955. We are proposing in sub-paragraph (e) below that the position of the dyestuff industry should be reviewed towards the end of 1955. We hope that the Report of the Committee of Experts and Government's decision thereon would be available to the Commission before this review is undertaken, so that the Commission might take them into consideration in formulating its recommendations regarding the protection and assistance needed by the industry by way of import duties or otherwise, for implementing its long-term plan of development.

(e) We have stated in paragraph 14(b) above that the rates of duties required to afford adequate protection to the indigenous industry work out to about 34 per cent. for Acid Dyes, 36 per cent. for Direct Dyes, 136 per cent. for Congo Red and 107 per cent. for Sulphur Black if the duty on specific intermediates is reduced to 10 per cent. *ad valorem*. In computing the duty for acid dyes we have excluded Acid Fast Red A, as its production is very uneconomical at present. For rapid fast dyes, rapidogen dyes, fast colour salts and solubilised vats, the rates of duties indicated without any reduction in the duties on intermediates are low, ranging up to a maximum of 8·2 per cent.

The existing rate of duties on the various dyes included in the Indian Customs Tariff Items Nos. 30(1) and 30(13) is 12 per cent. *ad valorem*. The duty is bound under the General Agreement on Tariffs and Trade to which India is a signatory. An increase in duty can, therefore, be effected only after negotiations with the contracting parties to the General Agreement. We are informed that as a result of negotiations completed by the Government of India with the other contracting parties, the duty on dyes included in the Indian Customs Tariff Item No. 30(13) can be increased to 20 per cent. *ad valorem*. Out of the dyes included in the scope of the present inquiry acid azo dyes, direct dyes and sulphur black are included in I.C.T. Item No. 30(13), while congo red. fast colour salts, rapid fast dyes, rapidogen dyes and solubilised vat dyes are included in I.C.T. Item No. 30(1). The concessions granted under the General Agreement on Tariffs and Trade are due to expire at the end of June 1955, and we recommend that necessary steps should be taken by Government to secure complete freedom of action to impose customs duties which may be found necessary on dyes, intermediates and other articles included in I.C.T. Items Nos. 30(1) and 30(13) when any new arrangements are entered into with foreign countries on the expiry of the present Agreement. It is not possible to finalise the scheme of protection for the dyestuff industry until the necessary release from commitments in respect of these two tariff items has been secured. The alternative form of protection which can be considered is the grant of subsidies but the amount of subsidy to be granted, if any, would itself depend on the quantum of protection which can be afforded to the industry by means of customs duties. Although the rates of duties on dyes are bound under the General Agreement on Tariffs and Trade at present, it will be possible to determine the appropriate rates of duties when commitments under the Agreement expire at the end of June 1955. In the meanwhile the industry is receiving some measure of assistance through import control. We feel that a decision in regard to the protection to be granted to the industry by means other than tariffs has to be deferred until the rates of customs duties to be levied on dyes are determined. We recommend, therefore, that a fresh inquiry into this industry should be held by the Commission towards the end of 1955, and in the meanwhile, the following scheme of protection should be put into force in addition to maintaining the existing restrictions on imports of dyes:—

(i) Protection to the dyestuff industry should be granted for a period of 10 years, *i.e.*, upto 31st December 1964, subject to periodical reviews by the Tariff Commission of the working of protection and the quantum of protection;

(ii) The duty on acid azo dyes, direct azo dyes and sulphur black which are included in the Indian Customs Tariff Item No. 30(13) should be increased to the maximum rate, *viz.*, 20 per cent. *ad valorem* permissible under the provisions of the General Agreement on Tariffs and Trade and converted into a protective duty. Since dyes constitute an essential material for important industries like the textile and paper industries and it is not desirable that the burden on these industries should be increased more than what is necessary to afford protection to the indigenous dyestuff industry, the higher rate of duty recommended by us should apply only to dyes mentioned above and not to all the dyes at present assessed under Item 30(13). A new item should, therefore, be introduced in the Indian Customs Tariff Schedule for acid azo dyes, direct azo dyes and sulphur black with a protective duty of 20 per cent. *ad valorem.*

(iii) The duty on congo red, fast colour salts, rapid fast dyes, rapidogen dyes and solubilised vat dyes included in I.C.T. Item No. 30(1) which is at present 12 per cent. *ad valorem* should be converted into a protective duty and a separate I.C.T. item should be introduced for these dyes;

(iv) The existing system of tariff values should continue but the tariff values should be reviewed in the light of the observations made in paragraph 14(b) above.

(f) Representations have been received from the various consuming industries, particularly the textile industry, which is the biggest consumer of dyes, regarding the adverse effects on the cost of production of any upward revision of duties on dyes. The Bombay Millowners' Association has informed us that the estimates given by some of their member mills show that the cost of dyes used in the production of dyed cloth varies from 2 to 13 per cent. of the value of such cloth. The majority of the member mills who have supplied this information have however stated that the cost of dyes varies from 2 to 7 per cent. of the value of the dyed cloth. We were also informed by the representatives of the Ahmedabad Millowners' Association that nearly 70 per cent. of the exports of cloth consisted of dyed cloth. Atul Products Ltd., in their memorandum submitted to us have stated that the cost of dyes used in some of the large textile mills in Ahmedabad ranged from 1 to 3 per cent. of the total value of the cloth produced. We consider that the percentage given by Atul Products Ltd., is on the low side because it is not the total value of cloth that should be taken into account but the value of cloth to which dyes are applied. Atul Products Ltd., have stated further that the dyes used by these mills were generally vat dyes, that is, expensive dyes, and not direct dyes the prices of which were comparatively lower. The Indian Paper Mills' Association has represented that the cost of dyes used for colouring paper varies from less than 1 to 20 per cent. of the value of paper. Under the scheme of protection recommended by us, it is inevitable that the consumer will have to bear an appreciable burden. Representations received by us from the consuming industries will, therefore, have to be given further consideration when devising the final scheme of protection. We would, however, like to emphasise even at this stage that since the manufacture of dyes in this country will be subject to numerous difficulties and handicaps and since it is desirable in the national interest to establish this industry in the country, the community as a whole will have to be prepared for fairly heavy sacrifices for developing this industry for some years to come.

(g) The present structure of customs duties on intermediates and dyes is anomalous, as the duty on finished dyes is only 12 per cent. while the duty on intermediates ranges from 25 to 37·8 per cent. The duties on intermediates constitute a serious handicap for certain sections of the industry. As we have already stated in paragraph 7(b), intermediates may be classified as specific intermediates, *i.e.*, those intermediates which can be used only for the manufacture of dyes and for no other purpose and other or non-specific intermediates which can be used for manufacturing dyes as well as other products. The difficulties of the indigenous industry arise mainly from the duties on specific intermediates and there will also be serious administrative difficulties in operating any system of refund of duty on non-specific intermediates. We are of the view that in all cases in which the protective duty indicated for any group of dyes works out appreciably higher than the normal level of 12 per cent. *ad valorem*, the industry should be granted the maximum possible remission of duty on such specific intermediates as are required for the manufacture of these dyes and are not yet produced in the country. This is necessary in order that the burden on the consuming industries may be kept as low as possible. On the basis of this criterion, no concession need be granted in regard to the duties on intermediates to that section of the indigenous industry which is engaged in the production of rapid fast dyes, rapidogen dyes, fast colour salts and solubilised vats. On the same basis, it is necessary to afford relief to Atul Products Ltd., in respect of the duties on certain specific intermediates which are listed below:

1. Para Nitraniline.
2. Amino Azo Benzene Hydrochloride
3. Sulphanilic Acid
4. Benzidine Di-hydrochloride
5. Sodium Naphthionate and Naphthionic Acid
6. Neville and Winther's Acid.
7. Rhoduline Acid
8. J Acid Urea
9. Para Amino Acetanilide
10. Dinitro Chlorobenzene
11. Meta Phenylene Diamine
12. Gamma Acid
13. Meta Toluylene Diamine
14. Chicago Acid
15. H Acid
16. G. Salt
17. Laurent's Acid.

The above intermediates are at present assessed to duty under I.C.T. item 28 at 37·8 per cent. *ad valorem* standard and 25·2 per cent. *ad valorem* preferential. Atul Products Ltd., import these intermediates mostly from Germany to which the standard rate of duty is applicable. In view of the preferential margin of 10 per cent. granted to U.K. under the India-U.K. Trade Agreement, 1939, we recommend that the standard rate of duty on intermediates listed above should be reduced to 10 per cent. *ad valorem*. This concession should remain in force until 31st December, 1955 when the position should be reviewed.

Other matters

16. (a) In the course of the present inquiry, we had to face difficulties due to the lack of detailed and properly classified statistics of imports of dyes. We, therefore, suggest that arrangements should be made to maintain records of production and imports according to the classification given below:—

I. Azo dyes:
  (a) Acid azo dyes
  (b) Basic azo dyes
  (c) Direct dyes other than Congo Red
  (d) Congo red
II. Azoic dyes and components:
  (a) Naphthols
  (b) Fast colour bases
  (c) Fast colour salts
  (d) Rapid fast dyes
  (e) Rapidogen dyes.
III. Vat dyes:
  (a) Indigo
  (b) Other vat dyes.
IV. Solubilised vat dyes
V. Sulphur black
VI. Sulphur dyes other than Sulphur Black
VII. Acid dyes other than Acid Azo dyes
VIII. Basic dyes other than Basic Azo dyes
IX. Mordant dyes including Alizarine
X. Chrome dyes
XI. Acetate Rayon dyes
XII. Lakes, Pigments, toners and spirit soluble dyes
XIII. Other dyes not specified above.

सत्यमेव जयते

(b) The success of the dyestuff industry depends in a large measure on the economic planning of production of dyes and intermediates with due consideration to the disposal of by-products and continuous research into processes and process materials. The importance of research in the development of the dyestuff industry can hardly be exaggerated. The progress of the dyestuff industry in foreign countries has been mainly due to the facilities provided for research and the employment of large numbers of highly trained technical workers. Intensive research has led to production of wider ranges and of new lines of dyes. Large sums are being spent by the manufacturers of dyes in foreign countries for research and for improving the methods of production and plant design. We recommend that the manufacturers of dyes in this country should set aside substantial amounts for research and employ an adequate staff of trained research workers.

17. Our conclusions and recommendations are summarised as under:—

Summery of conclusions and recommendations

(i) The scope of the present inquiry is confined to the following dyes: (1) Acid Azo Dyes, (2) Direct Dyes, (3) Azoic Dyes:—(a) Fast Colour Salts, (b) Rapid Fast Dyes, (c) Rapidogen Dyes, (4) Solubilised Vat Dyes and (5) Sulphur Black. [Paragraph 4]

(ii) The total demand for various groups of dyes is estimated at 11,402,000 lbs., the demand for different groups of dyes being estimated as follows: (1) Azo Dyes, 2,430,000 lbs. of which the demand for Acid Azo Dyes is estimated at 600,000 lbs., for Basic Azo Dyes at 30,000 lbs., for Congo Red at 800,000 lbs., and for Direct Dyes other than Congo Red at 1,000,000 lbs.; (2) Oil Soluble Dyes, 22,000 lbs.; (3) Azoic Dyes, 2,700,000 lbs. of which the demand for Naphthols is estimated at 1,300,000 lbs.; for Rapid Fast and Rapidogens at 300,000 lbs. and for Fast Colour Salts and Fast Colour Bases at 1,100,000 lbs.; (4) Indigo, 450,000 lbs.; (5) Other Vat Dyes 900,000 lbs.; (6) Sulphur Black 2,800,000 lbs.; (7) Aniline Salt, 400,000 lbs. and (8) Other Dyes 1,700,000 lbs. [Paragraph 5 (a)]

(iii) The total installed capacity of the units engaged in the production of various groups of dyes is as follows: (1) Azo Dyes, 2,080,640 lbs.; (2) Sulphur Black, 1,000,000 lbs.; (3) Rapid Fast Dyes, 292,000 lbs.; (4) Rapidogen Dyes, 152,000 lbs.; (5) Fast Colour Salts, 660,800 lbs.; (6) Solubilised Vats, 150,000 lbs.; (7) Oil Soluble Dyes, 37,032 lbs. and (8) Others, 79,000 lbs. Actual production in 1953 was as follows: (1) Azo Dyes, 701,491 lbs.; (2) Sulphur Black, 431,303 lbs.; (3) Rapid Fast Dyes, 144,288 lbs.; (4) Rapidogen Dyes, 36,391 lbs.; (5) Fast Colour Salts, 92,116 lbs.; (6) Solubilised Vats, 64,116 lbs.; (7) Oil Soluble Dyes, 5,122 lbs. and (8) Others, 4,300 lbs. [Paragraph 6(c)]

(iv) It is essential that the coal-tar distillation industry should be established in the country so that it will meet fully the requirements of the dyestuff industry. Close co-ordination between the development of the dyestuff industry and the coal tar distillation industry would be necessary and Government should initiate an investigation to determine the lines on which such development should be planned and the measures required to encourage such planned development. [Paragraph 7(a)]

(v) A plan for expanding the production of inorganic heavy chemicals as a necessary complement to a programme of manufacture of intermediates for the dyestuff industry should be formulated so that these chemicals are available to the indigenous dyestuff industry in sufficient quantities and at reasonable prices. [Paragraph 7(c)]

(vi) The quality of dyes produced in the country is generally satisfactory but there is room for improvement in respect of stability and consistency in strength and shades. [Paragraph 9(a)]

(vii) Government should make the necessary arrangements for the selection of samples of indigenous dyes by an independent agency and for the testing of their quality by a well-equipped institution. [Paragraph 9(a)]

(viii) The Indian Standards Institution should, in consultation with the producers and importers of dyes, try to evolve standards of strength with reference to which the actual strength of indigenous or imported dyes can be determined. [Paragraph 9(b)]

(ix) Government should take steps to ensure that the tariff values for imported dyes are fixed on the basis of the highest strengths in which the dyes are imported. They should also arrange to record the strengths adopted for the purpose of fixing the tariff values and to study how far the tariff values approximate to the average c.i.f. prices for such strengths over a period.

[Paragraph 14(b)]

(x) The lines on which the manufacture of dyes and intermediates might be developed in the country are indicated in paragraphs 15(b) and (c) of the Report. [Paragraph 15(b) and (c)]

(xi) Atul Products Ltd. should draw up a revised programme on a long-term basis for the manufacture of dyes and intermediates on the lines indicated in paragraph 15(d) of the Report. Similar programmes should be drawn up by other units for the manufacture of dyes and intermediates proposed to be manufactured by them. When these detailed programmes are received from the various units they should be referred to a committee of Government experts for examination in collaboration with the technical experts of the various units. The report of the Committee of experts and Government's decisions thereon should be available to the Commission before the position of the dyestuff industry is reviewed towards the end of 1955. [Paragraph 15(d)]

(xii) Government should take the necessary steps to secure complete freedom of action to impose customs duties which may be found necessary on dyes, intermediates and other articles included in Indian Customs Tariff item Nos. 30(1) and 30(13) when any new agreements are entered into with foreign countries on the expiry of the present General Agreement on Tariffs and Trade.

सत्यमेव जयते

[Paragraph 15(e)]

(xiii) A fresh inquiry into the industry should be held by the Commission towards the end of 1955 and in the meanwhile the following scheme of protection should be put in force in addition to maintaining the existing restrictions on imports of dyes: (1) Protection to the dyestuff industry should be granted for a period of 10 years, *i.e.*, up to 31st December, 1964, subject to periodical reviews by the Tariff Commission of the working of protection and the quantum of protection; (2) the duty on acid azo dyes, direct azo dyes and sulphur black which are included in the Indian Customs Tariff Item No. 30(13) should be increased to the maximum rate, *viz.*, 20 per cent. *ad valorem*, permissible under the provisions of the General Agreement on Tariffs and Trade and converted into a protective duty. Since dyes constitute an essential material for important industries like the textile and paper industries and it is not desirable that the burden on these industries should be increased more than what is necessary to afford protection to the indigenous dyestuff industry, the higher rate of duty recommended above should apply only to dyes mentioned above and not to all the dyes at present assessed under Item 30(13). A new item should, therefore, be introduced in the Indian Customs Tariff Schedule

for acid azo dyes, direct azo dyes and sulphur black with a protective duty of 20 per cent. *ad valorem*. (3) The duty on congo red, fast colour salts, rapid fast dyes, rapidogen dyes and solubilised vat dyes included in Indian Customs Tariff Item No. 30(1) which is at present 12 per cent. *ad valorem* should be converted into a protective duty and a separate I.C.T. item should be introduced for these dyes; (4) the existing system of tariff values should continue but the tariff values should be reviewed in the light of the observations made in paragraph 14(b) of the Report.
[Paragraph 15(e)]

(xiv) The standard rate of duty on specific intermediates listed in paragraph 15(g) of the Report should be reduced to 10 per cent. *ad valorem*. This concession should remain in force until 31st December, 1955, when the position should be reviewed.
[Paragraph 15(g)]

(xv) Arrangements should be made to maintain records of production and imports according to the classification given in paragraph 16(a) of the Report. [Paragraph 16(a)]

(xvi) The manufacturers of dyes should set aside substantial amounts for research and employ adequate staff of trained research workers. [Paragraph 16(b)]

Acknowledgements

18. We wish to express our thanks to the producers, importers and consumers and Associations of producers and importers who furnished valuable information to us in connection with this inquiry and gave evidence before us. Our thanks are also due to Dr. A. Nagaraja Rao, Chief Industrial Adviser, Ministry of Commerce and Industry for his assistance during the public inquiry. We are greatly indebted to Dr. K. Venkataraman, Director, Department of Chemical Technology, Bombay University, for discussing with us various aspects of the problem of developing the dyestuff industry in India. Our thanks are also due to Dr. S. R. Ramachandran, Deputy Director, Office of the Textile Commissioner, Bombay, for furnishing us with data regarding imports of dyes and to the Bombay Millowners' Association and the Ahmedabad Millowners' Association for supplying useful information to us.

M. D. BHAT, *Chairman*.

B. N. ADARKAR, *Member*.

B. N. DAS GUPTA, *Member*.

D. K. MALHOTRA, *Secretary*

BOMBAY,

13th October, 1954.

APPENDIX I.

[*Vide* paragraph 2]

List of producers, importers, consumers and others to whom questionnaires were issued and those who submitted replies or sent memoranda.

R—THOSE WHO REPLIED

M—THOSE WHO SENT MEMORANDA

N—THOSE WHO WERE NOT INTERESTED

PRODUCERS:

R. 1. Atul Products Ltd., Parnera, Via. Bulsar.

R. 2. National Dyes, Girton House, 177, Lamington Cross Road, Bombay 7.

R. 3. Associated Research Laboratories, 272 A, Bavla Compound, Kala Choki Road, Chinchpokli, Bombay 12.

R. 4. Durga Laboratories, 345, Samuel Street, Vadgadi, Bombay 3.

R. 5. National Chemical Industries, 26, Najafgarh Road, Industrial Area, Delhi 6.

R. 6. India Dyechem Industries Ltd., 927, Tobacco Katra, Delhi 6.

7. International Research Laboratories, 349, Vadgadi, Bombay 3.

R. 8. India Chemical Industries Ltd., 11, Jail Road, Amritsar.

R. 9. Shree Dyes & Chemical Industries, Standard Building, Hornby Road, Fort, Bombay.

M. 10. The Dyestuffs Manufacturers' Association, C/o Associated Research Laboratories, 272 A, Bavla Compound, Kala Choki Road, Chinchpokli, Bombay 12.

M. 11. Indian Chemical Manufacturers' Association, 12, Netaji Subhas Road, Calcutta 1.

R. 12. Anandlal Hiralal, Indian Dyestuff Industries Ltd., 28, Appolo Street, Bombay 1.

IMPORTERS:

R. 1. Imperial Chemical Industries (India) Ltd., Crescent House, 19, Wittet Road, Ballard Estate, Bombay.

R. 2. Ciba Dyes Ltd., Jehangir Building, Esplanade Road, Bombay 1.

3. Sandoz Products Ltd., 3, Wittet Road, Ballard Estate, Bombay 1.

4. Dadajee Dhackjee & Co. Ltd., Dr. Annie Besant Road, Worli, Bombay 18.

R. 5. Khatau Vallabhadas & Co., Vadgadi, Bombay 3.

R. 6. Amritlal & Co. Ltd., 11, Sprott Road, Ballard Estate, Bombay 1.

7. Mata Lachhmi Co., Husseni Chambers, Nanabhai Road, Bombay 1.

8. Shivjee Liladhar & Co., 334, Samuel Street, Vadgadi, Bombay 3.

9. Shree Krishna Dyes Corporation, Vadgadi, Bombay 3.

10. Indo Colour Trading Co., Vadgadi, Bombay 3.

11. Kumar Colour Trading Co., Vadgadi, Bombay 3.

12. Central Dyes & Chemicals Co., Vadgadi, Bombay 3.

R. 13. Chika Ltd., Industrial Assurance Building, Opp: Churchgate Station, Bombay 1.

14. Fine Dyestuff & Chemicals (India) Ltd., 75, Appolo Street, Fort, Bombay.

R. 15. Fedco Ltd., Kasturi Building, Churchgate Reclamation, Bombay 1.

R. 16. Chavannes & Co. Ltd., Mercantile Chambers, Graham Road, Bombay 1.

17. Nanavati & Co., 16 Appolo Street, Fort, Bombay.

R. 18. S. K. Kabbur Ltd., 3, Bastion Road, Fort, Bombay 1.

R. 19. Continental Trading Syndicate, Station Road, Baroda.

R. 20. Indokem Ltd., 143 Mahatma Gandhi Road, Bombay 1.

R. 21. Amalgamated Chemicals & Dyestuffs Company Limited, Neville House, Nicol Road, Ballard Estate, Bombay.

R. 22. Valia Brothers, 60, Garibdas Street, Vadgadi, Bombay 3.

23. Esufali Akbarali & Co., 312, Vadgadi, Bombay 3.

24. Mohamedbhai Kalimuddin & Co., 41, Old Bangalipura, Bombay 3.

R. 25. Paramount Dyes & Chemicals Ltd., Elphinstone Building, Churchgate Street. Bombay 1.

R. 26. Jaishankar Keshavram & Co., 33/35, 1st Parsiwada, Vithalbhai Patel Road, Bombay 4.

27. Hansa Dyeing & Printing Works, 33/35, 1st Parsiwada, Vithalbhai Patel Road, Bombay 4.

28. Capco Ltd., Co-operative Insurance Buildings, Sir P. M. Road. Bombay 1.

R. 29. Association of Indian Importers of Dyestuffs, Fort Chambers. Hammam Street, Fort, Bombay.

R. 30. U. D. Dadia & Co., 318, Samuel Street, Vadgadi, Bombay 3.

N. 31. Monsanto Chemicals of India Ltd., 133, Mahatma Gandhi Road. Bombay 1.

N. 32. Kodak Ltd., Kodak House, Hornby Road, Fort, Bombay.

33. Elephant Oil Mills Ltd., P. O. Box No. 663, Rustom Building, Churchgate Street, Bombay.

N. 34. Getz Bros. & Co., Western India House, Sir P. M. Road, Bombay 1.

35. Desipa Trading Co. Ltd., 67/68 New Citizen Bank House, Corner Palton Road, Bombay 1.

36. Lakshmi Paint Works, 14/2 Old China Bazaar Street, Calcutta.

37. French Dyes & Chemicals (India) Ltd., Adelphi, 3 Queens Road, Bombay 1.

38. All India Importers' Association, Churchgate House, Churchgate Street, Fort, Bombay 1.

R. 39. The Bombay Karina, Colour & Chemical Merchants' Association, 222, A, Samuel Street, Bombay 3.

40. Bhavanidas Gangadas & Co. Ltd., 233-35, Samuel Street, Vadgadi, Bombay 3.

CONSUMERS:

1. All India Manufacturers' Organization, Industrial Assurance Building, Churchgate, Fort, Bombay.

2. Association of Indian Industries, Industrial Assurance Building, Churchgate, Fort, Bombay.

3. Silk & Art Silk Mills Association Ltd., Podar Chambers, Parsee Bazar Street, Fort, Bombay.

4. Bengal Silk & Art Silk Mills Association, 4, Ganesh Chandra Avenue, Calcutta 13.

N. 5. Mysore Silk Association, Chamarajpet, Bangalore City.

6. Mysore Silk Handloom Weavers' Association, 362, Chickpet, Bangalore City.

R. 7. Ahmedabad Mill-Owners' Association, Lal Darwaja, Post Box No. 7, Ahmedabad.

8. Bengal Mill Owners' Association, 2, Church Lane, Calcutta.
9. Madhya Pradesh Mill Owners' Association, Dhanwatay Chambers, Gita Grounds, Sitabuldi, Nagpur.
R. 10. Madhya Bharat Mill Owners' Association, Indore.
R. 11. Saurashtra Mill Owners' Association, Wadhwan Camp, Saurashtra.
R. 12. Millowners' Association, Elphinstone Building, Churchgate Street, Bombay 1.
13. Southern India Mill Owners' Association, Vyayal Street, Coimbatore.
N. 14. Indian Paper Mills Association, 23-B, Netaji Subhas Road, Calcutta.
R. 15. Indian Paper Makers' Association, Royal Exchange, Post Box No. 250, Calcutta.
16. Hosiery Manufacturers' Association, Ludhiana.
17. Ludhiana Hosiery Industry Federation, Ludhiana.
18. Bombay Hosiery Manufacturers'. Association, 105, Chakla Street, Bombay 3.
19. Bengal Hosiery Manufacturers' Association, 20, Beaden Street, Calcutta 6.
20. Federation of Woollen Manufacturers' in India, J. K. Building, Dougall Road, Ballard Estate, Bombay.
R. 21. Tanners Federation of India, Kanpur.
R. 22. Shree Sajjan Mills Ltd., Ratlam.
R. 23. Indian Paint Manufacturers' Association, 23-B, Netaji Subhas Road, Calcutta 1.
24. Allwyns Ltd., 92, Ardeshir Dady Street, Vithalbhai Patel Road, Bombay 4.
R. 25. Hansa Dyeing & Printing Works, 33/35, 1st Parsiwada, Vithalbhai Patel Road, Bombay 4.
R. 26. Paint Federation, Royal Exchange, P. B. No. 280, Calcutta 1.
27. Asian Oil & Paint Co. India Ltd., 194-A, Gaiwadi, Girgaum, Bombay 4.
28. Elephant Oil Mills Ltd., P.O. Box No. 663, Rustom Building, Churchgate Street, Bombay.
N. 29. Lever Brothers (India) Ltd., Scindia House, Dougall Road, Ballard Estate, Bombay.
30. H. Moolchand & Co., New Citizen Bank Building, 1st Floor, 25, Parsee Bazar Street, Fort, Bombay.
31. Lakshmi Paint Works, 14/2 Old China Bazar Street, Calcutta.
32. Champion Industrial Works, 101, Khetwadi Main Road, Bombay 4.
R. 33. Garment Cleaning Works, 36, Gowalia Tank Road, Bombay 26.

APPENDIX II

[*Vide* paragraph 2]

List of persons who attended the Commission's public inquiry on 29th and 30th December, 1953

Producers

1. Shri B. K. Muzumdar 2. Shri T. C. Adalja 3. Shri B. V. Shah	Representing	Atul Products Ltd., Parnera, *via* Bulsar.
4. Shri A.S. Datar	Do.	Dyestuffs Manufacturers' Association, Bombay and Durga Laboratories, 345, Samuel Street, Vadgadi, Bombay-3.
5. Shri Mohanlal Shah	Do.	Indian Chemical Manufacturers Association, Calcutta.
6. Shri S. V. Wagle	Do.	Durga Laboratories, Bombay.
7. Shri B. R. Nayar	Do.	India Dyechem Industries Ltd., 927, Tobacco Katra, Delhi 6.
8. Shri V. D. Desai 9. Shri T. R. Sathe	Do.	Associated Research Laboratories 272 A, Bavla Compound, Kala Choki Road, Chinchpokli, Bombay-12.
10. Shri S. J. Shah.	Do.	Indian Dyestuff Industries Ltd., 28, Applo Street, Bombay-1.
11. Shri Santok Singh 12. Shri Sohan Singh	Do.	National Chemical Industries, 26, Najafgarh Road, Industrial Area, Delhi.
13. Shri K. N. Shah 14. Shri H. S. Ramnathan	Do.	Shree Dyes and Chemical Industries, Standard Building, Hornby Road, Bombay-1.
15. Shri Kishenchand	Do.	India Chemical Insdustries, Jail Road, Amritsar.
16. Shri M. V. Muzumdar	Do.	National Dyes, Girton House, 177, Lamington Cross Road, Bombay-7.

Importers

17. Mr. J. Greenwood	Do.	I.C.I. (India) Ltd., Crescent House, 19, Wittet Road, Ballard Estate, Bombay.
18. Mr. E. Bernet	Do.	Ciba Dyes Ltd., Jehangir Building, Esplanade Road, Bombay
19. Mr. E. Eichenberger 20. Mr. E. Wipf	Do.	Sandoz Products Ltd., 3, Witteet Road, Ballard Estate, Bombay.
21. Shri Khatau Vallabhadas 22. Shri Dharamsey Khatau	Do.	Khatau Vallabhadas & Co., 171, Vadgadi, Bombay-3.
23. Shri J. H. Doshi	Do.	Amritlal and Co., Ltd.. 11 Sprott Road, Ballard Estate, Bombay.
24. Shri P. Shrinivasan	Do.	Chika Ltd., Industrial Assurance Building, Churchgate, Bombay-1.
25. Shri B. R. Chendwanker	Do.	Fedco Ltd., Kasturi Building, Churchgate Reclamation, Bombay-1.
26. Shri K. H. Kabbur	Do.	Association of Indian Importers of Dyestuffs, Bombay and S. K. Kabbur Ltd., 3, Bastion Road, Bombay.

mporters.—contd.

	Shri N. K. Joshi Shri M. Vaidyanathan Shri B. N. Phadke	Representing	S. K. Kabbur Ltd., Bombay.
	Shri K. N. Dhorda	Do.	Continental Trading Syndicate, Station Road, Baroda.
31.	Mr. R. Uebersax	Do.	Amalgamated Chemicals and Dyestuffs Co. Ltd., Neville House, Nicol Road, Ballard Estate, Bombay.
32.	Shri M. K. Mehra	Do.	Paramount Dyes and Chemicals Ltd., Elphinstone Building, Churchgate Street, Bombay-1.
33.	Shri N.M. Shah	Do.	The Bombay Kariana, Colour and Chemical Merchants' Association, 222A, Samuel Street, Bombay-3.
34.	Shri S. R. Bolar	Do.	French Dyes and Chemicals (India) Ltd., Adelphi, 3, Queen's Road, Bombay.
35.	Shri V. B. Goradia	Do.	Asiatic Dyestuff Agency, Bombay.
36.	Shri N. S. Iyengar	Do.	Chemdye Trading Co. Ltd., Kamer Building, 38, Cawasji Patel Street, Bombay.
37.	Shri D. G. Valia	Do.	Valia Bros., Bombay.
38.	Shri N. M. Dadachanji	Do.	Kumar Colour Trading Co., 79, Vadgadi, Bombay-3.
39.	Shri M. B. Mankar	Do.	Dadajee Dhackjee and Co. Ltd., Worli, Bombay-18.
40.	Shri K. S. Bhumgara	Do.	Eskay Chemial Corporation Bombay.
41. 42.	Shri R. C. Shah Shri S. M. Shah	Do.	All India Importers Association, Churchgate Street, Bombay-1.

Consumers:

43.	Shri Navnitlal Shankarlal	Do.	Ahmedabad Millowners Association, P.O. Box 7, Ahmedabad.
44.	Shri H. M. Vyas	Do.	Millowners Association, Churchgate Street, Bombay-1.
45.	Shri S. P. Pandit	Do.	Tanners Federation of India, Kanpur.

Government Officials:

46.	Dr. A. Nagaraja Rao		Chief Industrial Adviser Ministry of Commerce and Industry, New Delhi.
47.	Shri V. B. Thosar	Representing	Director of Industries, Bombay.
48.	Shri K. Vyasulu (observer)	Do.	Planning Commission, New Delhi.
49.	Dr. S. R. Ramachandran	Do.	Office of the Textile Commissioner, Bombay.
50. 51.	Shri Suri Shri R. C. Shelat	Do.	Office of the Collector of Customs, Bombay.

General:

52. 53.	Dr. R. D. Tilak Shri V. K. Dikshit	Do.	Department of Chemical Technology, University of Bombay, Bombay-19

APPENDIX III

[*Vide* paragraph 4]

List of dyes which are being produced in India at present and of those which are included in the manufacturing programme of the various units.

Groups of dyes produced at present	Groups of dyes which are planned to be produced in the near future	Groups of dyes for which there is no production programme at present
1. Acid azo dyes	1. Azoic dyes and components.	1. Acid dyes other than Acid Azo dyes.
2. Basic azo dyes only Bismark Brown.	(*a*) Naphthols (*b*) Fast Colour bases 2. Vat dyes.	2. Basic dyes other than Bismark Brown.
3. Direct Azo Dyes (including Congo Red).		3. Sulphur dyes other than Sulphur Black.
4. Sulphur dyes only Sulphur Black.		4. Mordant dyes including Alizarine.
5. Azoic dyes— (*a*) Rapid Fast Colours. (*b*) Rapidogens. (*c*) Fast Colour Salts.		5. Chrome dyes.
6. Solubilised Vat dyes.		6. Acetate Rayon dyes. 7. Indigo. 8. Lakes, Pigments and Toners.

सत्यमेव जयते

STATEMENT A

APPENDIX IV

[*Vide* paragraph 10]

A) Statement showing imports of dyes during the years 1946-47 to 1952-53 as shown in the accounts relating to the foreign trade of India

(Quantities in 1000 lbs. & values in 1000 Rs.)

Items	1946-47		1947-48		1948-49		1949-50		1950-51		1951-52		1952-53	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I—(*a*) *Alizarine, Dry* :														
1. Not exceeding 40 per cent.	..	..	1	2	..	..	..	..	..	..	4	15	..	..
2. Exceeding 40%	146	1,342	142	1,523	68	605	7	60	42	152	11	77	2	9
(*b*) *Moist* :														
1. Not exceeding 16 %.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Over 16 % but not exceeding 20%.	1,237	2,578	2,191	5,072	407	808	98	171	34	59	186	272	1	1
3. Exceeding 20%.	4	18	171	616	158	509	..	..	..	..	16	48	..	..
	1,387	3,938	2,505	7,218	633	1,922	105	231	76	211	217	412	3	10

II. *Congo Red* .	523	2,115	861	5,381	144	8,062	938	3,952	1,413	6,243	1,178	4,377	393	1,023
III. *Coupling Dyes of the Naphthol group*:														
1. Naphthols .	905	9,413	1,434	15,678	1,232	16,815	1,280	14,268	1,206	13,142	1,487	15,349	969	9,042
2. Rapid Fast Colours (Rapid Salts).	91	1,297	88	1,383	127	2,257	172	2,898	264	4,746	254	3,887	254	4,009
3. Bases .	1,356	13,126	117	11,487	510	4,957	369	3,107	959	9,185	988	9,959	660	5,577
4. Other Salts .	810	4,074	840	4,045	300	1,704	647	3,654	329	5,299	928	5,011	421	2,076
IV. *Vats* :														
1. Indigo . .	562	2,831	879	5,165	933	4,318	292	1,395	348	2,410	661	3,517	347	1,839
2. Carbazole Blue	34	379	51	540	19	225	6	83	15	126	40	582	4	37
3. Other Sorts :														
(*a*) Paste . .	378	3,920	656	8,182	470	5,809	217	2,850	257	3,179	343	4,429	79	1,000
(*b*) Powder .	602	21,448	1,201	45,911	926	37,993	588	29,432	814	41,292	1,191	54,642	671	30,359
V. *Sulphur Black* .	1,941	3,233	4,103	7,528	3,316	6,141	503	1,150	3,813	8,271	3,067	7,274	1,147	2,400
VI. *Metanil Yellow*	120	537	623	2,259	293	1,362	267	1,136	228	982	264	1,097	118	514
VII. *Auramine of concentration of* 15% *and less.*	8	53	14	91	16	109	1	4	34	239	39	297	..	..
VIII. *Rhodamines (Carthamines) of concentration of* 15% *and less.*	8	92	3	84	37	1,286	11	186	23	356	18	300	..	..
IX. *Aniline Salts* .	613	884	305	312	197	211	169	151	538	652	628	864	11	13
X. *Others* . .	3,543	20,649	5,798	38,826	4,588	30,254	1,944	15,080	3,134	23,492	4,035	30,733	2,134	17,178
TOTAL . .	12,881	87,989	19,478	154,090	13,741	123,425	7,509	79,577	14,051	119,825	15,338	142,730	7,211	75,077

(B) Statement showing imports of dyestuffs countrywise during the years 1946-47 to 1952-53 as shown in the accounts relating to the foreign trade of India.

(Quantities in 1,000 lbs. and values in 1,000 Rs.)

Name of the Country	1946-47		1947-48		1948-49		1949-50		1950-51		1951-52		1952-53	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.	Lbs.	Rs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. United Kingdom	5,029	29,038	5,017	35,693	4,751	27,095	2,521	22,585	5,976	40,916	6,055	43,413	2,188	20,572
2. Germany .	..	..	39	247	618	5,497	2,488	21,947	3,124	30,021	4,417	51,212	2,804	29,724
3. Switzerland .	773	13,200	861	14,254	801	14,607	595	11,362	1,012	18,103	694	14,601	378	8,404
4. United States of America.	6,738	43,372	13,115	94,711	8,154	70,491	1,333	18,929	926	9,359	1,380	12,152	33	6,390
5. Other Countries	343	2,380	1,499	9,184	697	5,735	573	4,754	2,913	21,426	2,794	21,351	1,509	9,990
TOTAL . .	12,883	87,990	20,531	154,089	15,021	123,425	7,510	79,577	13,951	119,825	15,340	142,729	7,210	75,080

APPENDIX V

[*Vide* paragraph 10]

Details of the Import Control Policy for Dyes for the licensing periods January-June, 1951 *to July-December,* 1954.

I. ***January—June, 1951:***

During the licensing period January—June, 1951 imports of dyes were licensed freely from soft currency areas whereas general icences were granted to established importers to the extent of 10 per cent. of half of best year's imports and actual users were granted icences for their two months' requirements. Similarly licences for imports from Japan were granted to the extent of 25 per cent. of half of best year's mports to established importers and 2 months' actual requirements to actual users.

II. ***July—December, 1951:***

During this licensing period dyes were covered by the Open General Licence No. XXIII by which dyes, *viz.*, Dimethylaniline, Rhodamine and Rhodine were allowed to be imported from any country except the Union of South Africa while dyes derived from coal-tar and coal-tar derivatives used in any dyeing process were allowed to be imported from countries other than (a) the United States of America and any territory under the suzerainty or sovereignty of the U.S.A., Canada and other American Account Countries, (b) Japan, and (c) Union of South Africa. General licences were granted to established importers and actual users on the basis of 20 per cent. of half of best year's imports to the former and 2 months' requirements to the latter. Similarly, for licences for imports from Japan the quotas were 25 per cent. of half of best year's imports and 2 months' requirements respectively.

III. ***January—June, 1952:***

During the licensing period January—June, 1952 dyes were covered by the Open General Licence No. XXIII by which, dyes *viz.*, Dimethylaniline, Rhodamine and Rhodine were allowed to be imported from any country in the world except the Union of South Africa while "dyes derived from coal-tar, and coal-tar derivatives used in any dyeing process" were allowed to be imported from all countries except (a) the United States of America and any territory under the suzerainty or sovereignty of the U.S.A., Canada and other American Account Countries, (b) Japan, and (c) Union of South Africa. Established importers were, however, granted general licences to the extent of 10 per cent of half of their best year's imports of dyes derived from coal-tar and coal-tar derivatives used in any dyeing process. The validity of the Open General Licence No. XXIII expired on 30th June, 1952.

IV. ***July—December, 1952:***

During this licensing period dyes, *viz.*, Dimethylaniline, Rhodamine and Rhodine were on the O.G.L. No. XXV for imports from all countries except (a) the United States of America and any territory under the sovereignty or suzerainty of the U.S.A., Canada and other American Account countries and (b) Union of South Africa. No licences were granted to established importers for dyes derived from coal-tar and coal-tar derivatives used in any dyeing process. Actual users' licences for solubilised vat dyes only were granted in consultation with the Textile Commissioner.

V. ***January—June, 1953:***

During this licensing period dyes, *viz.*, Dimethylaniline, Rhodamine and Rhodine were on O.G.L. No. XXV upto 31st March, 1953. For dyes derived from coal-tar and coal-tar derivatives used in any dyeing process established importers were granted general licences for imports from any country to the extent of 20 per cent. of half of their best year's imports and sofcurrency licences to the extent of 75 per cent. of half of their best year's imports. These quota licences were not valid for the imports of Rapid Fast Colours and Solubilised Vat Dyes of Green IB and Blue 04B types. Not more than one per cent. of the face value of the quota licences for soft currency area was allowed to be utilised for the import of pigment colours in emulsion from used in textile printing. Actual users applications were considered for the import of only solubilised vat dyes of Green IB and Blue 04B types in consultation with the Textile Commissioner.

VI. *July-December, 1953*:

During this licensing period dyes, *viz.*, Dimethylaniline, Rhodamine and Rhodine were on the O.G.L. No. XXX valid for soft currency countries. The period of the O.G.L. expired on 30th September, 1953. The policy for dyes drived from coal-tar and coal-tar derivatives used in any dyeing process was substantially the same as the preceding period except that the quota for soft currency licences was increased to 100 per cent. of half of their best year's imports for established importers. By a special notification issued on 18th December, 1953 the validity of the quota licences for July-December, 1953 remaining unused till that date was further restricted to exclude the imports of Fast Colour Salts (Developing Salts). The use of the quota licences was also restricted for the imports of (a) Rapidogens; (b) Acid Dyes—Acid Orange, Acid Fast Red, Black, Corcein Scarlet; (c) Direct Dyes—Blue, Brown, Red, Green, Black, Garnet, Violet, and (d) Sulphur Black in so far as not more than 3 per cent. of the face value of the licences could be utilised for their imports.

VII. *January-June, 1954*:

During this licensing period the policy for general and soft currency quota licences was substantially the same as in the preceding period, the quota percentages being 20 per cent. and 100 per cent. of half of the best year's imports respectively. The policy regarding the restricted use of the quota licences for imports of centain dyes was, however, amended to allow upto 5 per cent. of the face-value of the licences to be utilised for imports of (a). Rapidogens; (b) Acid dyes, namely, Acid Orange, Acid Fast Red, Acid Black, Acid Scarlet; (c) Direct Dyes, namely, Blue, Brown (including Khaki), Red, Green Black, Garnet, Violet; and (d) Sulphur Black. Moreover, within the face value specified above, not more than 1/3rd of this 5 per cent. of the face value of the licence was allowed to be used for imports of Sulphur Black and 1/6th for the imports of Direct Red.

सत्यमेव जयते

VIII. *July-December, 1954*:

The policy for the licensing period July-December 1954 for dyes derived from coal-tar and coal-tar derivatives used in any dyeing process (other than Dimethylaniline, Rhodamine and Rhodine, which were on O.G.L. soft upto 30th September, 1954) is to grant general licences upto 20 per cent. of half of best year's imports and soft currency licences upto 100 per cent. of half of best year's imports to established importers. These quota licences will not be valid for the imports of Rapid Fast Colours (other than Rapidogen type) and Solubilised Vat dyes of Green IB and Blue 04B types and Fast Colour Salts (Developing Salts). Not more than one per cent. of the face value of the quota licences for soft currency area may be utilised for the import of pigment colours in emulsion from used in textile printing. Moreover, not more than 4 per cent. of the face value of the licence can be utilised for the imports of (a) Rapidogens and Spectrolenes; (b) Acid dyes, namely, Acid Orange, Acid Fast Red, Acid Black, Acid Scarlet; (c) Direct dyes, namely, Blue, Brown (including Khaki), Red, Green, Black, Garnet, Violet; and (d) Sulphur Black. Within the face value restriction specified above, not more than 1/4th of this 4 per cent. of the licence can be used for imports of sulphur Black and 1/3rd for the imports of Direct Red. The following dyes may be imported outside the face value restriction, namely, (1) Nigrosine; (2) Acid dyes—(a) Eosine, (b) Dyes containing metallic complexes; (3) Direct dyes—(a) dyes based on phthalocyanin and (b) Sulphur dyes based on Naphthalene.

GIPD—SS—184 CP—21-6-55